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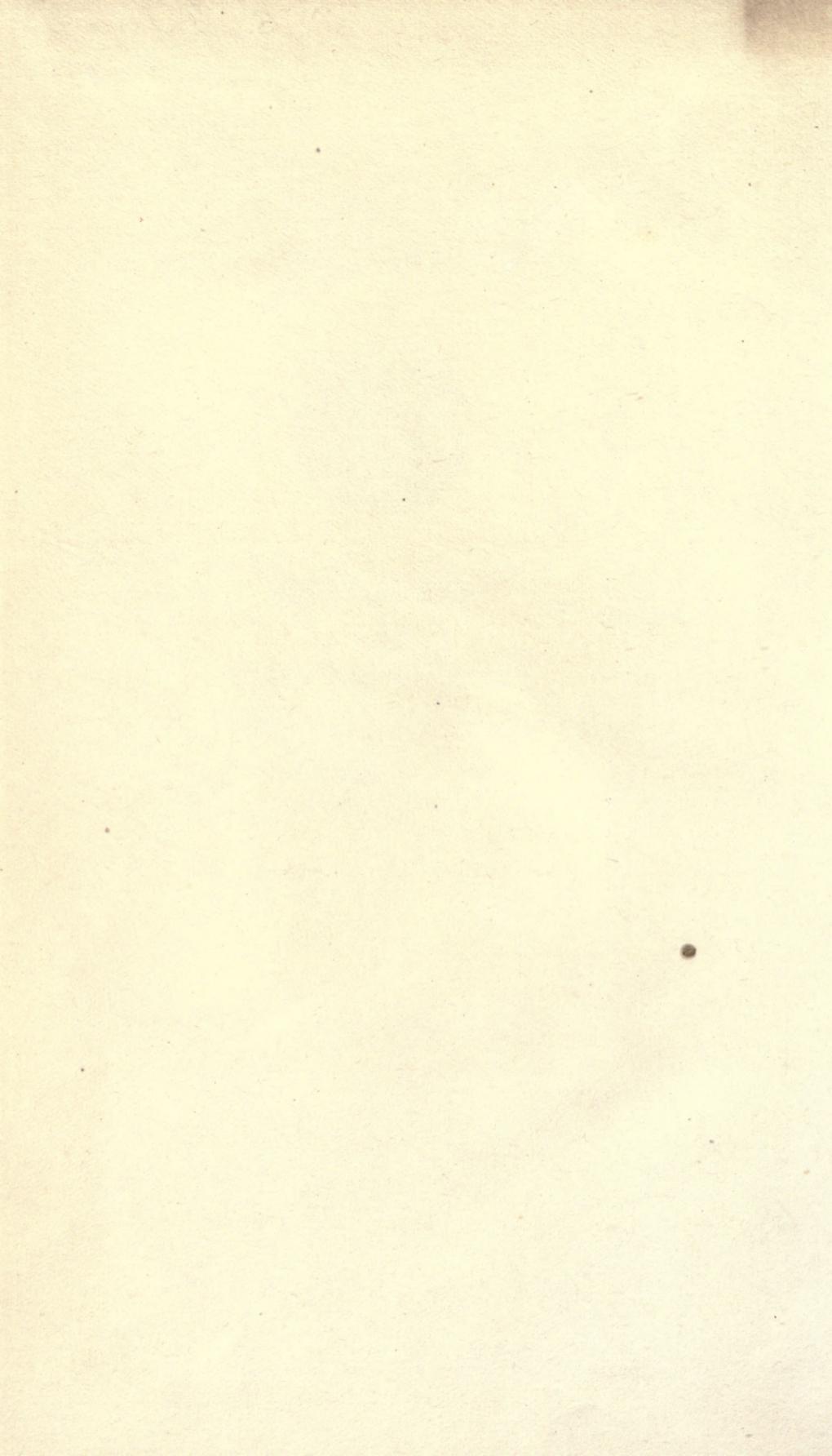
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A LIST
OF THE
BIRDS OF HUDSON HIGHLANDS
WITH ANNOTATIONS.

PART I.

BY EDGAR A. MEARNs.

[From the BULLETIN OF THE ESSEX INSTITUTE, Vol. X, Nos. 10, 11, 12, 1878.]

1878-1881

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A LIST OF THE
BIRDS OF THE HUDSON HIGHLANDS,
WITH ANNOTATIONS.

BY EDGAR A. MEARNs.

ABOUT six years ago, in 1872, I first formed the plan of working up the ornithology of this region as thoroughly as possible. Since that time I have been constantly at work in the field at all seasons of the year, except during the summer months, when other business has almost wholly interrupted my ornithological work. This is to be regretted, for, otherwise, I might have observed the breeding-habits of a greater number of our rarer summer residents; and probably should have secured some of the southern forms that occasionally wander northward, during the hot months of summer.

My residence is, for such a purpose, very happily located at Highland Falls, New York; affording, from its position, an excellent point for ornithological observation. It is "situated on the right [west] bank of the Hudson River, fifty-one miles above New York City, in the midst of a range of the Alleghany Mountains known as the Highlands. Latitude, $41^{\circ} 23'$ north; longitude, $3^{\circ} 3'$ east."¹

The surface of the country is exceedingly varied, abounding in high mountains with enormous perpendicular cliffs, while large streams flow in the valleys. Lakes, ponds, and brooks are very numerous, affording, as they do, favorite resorts for both migrating and stationary birds. The numerous islands of the Hudson afford choice resting places for migrating flocks of small birds, which prefer to follow, on their long and fatiguing vernal and autumnal journeyings, the course of the river. The whole region is wild, and sparsely inhabited.

I have prosecuted my researches, on foot, in the three adjacent counties, bordering the Hudson on either side—Orange, Rockland, and Ulster, on the west; and Dutchess, Putnam, and Westchester, on

¹The situation, as above quoted, is from "Circular No. 8, Surgeon General's Office," and refers to the West Point Military Academy, a mile north of Highland Falls.

the east side. But most of my investigations and collections have been made along the river-banks, near my residence, or, as the title expresses it, in the "Highlands,"—a section of the river-valley extending north from Kidd's Point, or Caldwell's Landing, for a distance of twenty miles.

The mountain slopes are thickly wooded in most places, but in the rocky soil the deciduous trees seldom grow to a very large size. The river slopes are, for the most part, thickly clothed with coniferous trees, affording food and shelter for the winter residents. The following list of *Coniferæ* belongs to our flora:—

- Pinus rigida*, Miller. Pitch Pine.
- Pinus strobus*, Linné. White Pine.
- Abies canadensis*, Michx. Hemlock.
- Thuja occidentalis*, Linné. American Arbor Vitæ.
- Juniperus communis*, Linné. Common Juniper.
- Juniperus virginiana*, Linné. Red Cedar.
- Taxus baccata* var. *canadensis*. American Yew; Ground Hemlock.

The Hudson River constitutes a natural channel, through which the tide of semi-annual migration always pours with more than ordinary vigor; and it also affords an avenue of approach for the numerous aquatic species that visit us during the migrations, or remain here during the summer. Hence many of the marine species visit us during their migrations.

Zoologists are familiar with the fact, that rivers are very important factors in limiting or extending different faunæ. It is known that a given avi-fauna may be prolonged by them in streaks. This is a demonstrable fact, and is equally applicable to other classes of animals, and even to the flora. Of the mammals, the common Opossum (*Didelphis virginiana*) may be cited as illustrating this influence. This species finds its northernmost extension along the west bank of the Hudson. It also illustrates the restrictionary effect of rivers. The Hudson interposes a barrier to the progress of the species eastward, and, accordingly, it has rarely—never to my knowledge—been observed on the east bank of the river, though it is not uncommon upon the opposite side; occurring at least as far up as Newburgh. Among the plants, I shall cite but a single species, the common persimmon (*Diospyros virginiana*), which has also crept up the Hudson to a considerable distance from the general northern boundary of its habitat. DeKay wrote the following, in confirmation of the above-mentioned facts, as long ago as 1844: "On the other hand, the Hudson River appears to form a natural geographical limit to the extension of some species, at least in any considerable numbers. Thus, the Opossum of the South rarely, if ever, outstrips this boundary; among the reptiles,

the Chain Snake and Brown Swift, and the Buzzard and many other species among the birds.”² C. Hart Merriam, in his “Review of the Birds of Connecticut,”³ has clearly brought out the fact, previously alluded to by Mr. H. A. Purdy,⁴ that the avi-fauna of Connecticut, exhibits a marked Carolinian tinge along its southern border. Merriam adds, furthermore, that this tinge is especially well-marked about the mouth, and “runs up the valley of the Connecticut River, extending completely through the State, and even into Massachusetts.” The valley of the Connecticut exhibits, in this respect, precisely similar conditions to those presented by the Hudson River Valley.

Prof. J. A. Allen wrote,⁵ in 1871, “On the Atlantic coast this fauna [Carolinian] includes Long Island and a small portion of Southeastern New York.” He also enumerated thirty-two species as being in a general way “limited in their northern range” by this fauna, adding that a few of them occur also “as stragglers in the Alleghanian Fauna.” Mr. Eugene P. Bicknell has recently published an excellent paper, in the “Bulletin of the Nuttall Ornithological Club” (Vol. III, No. 3, July, 1878), entitled “Evidences of the Carolinian Fauna in the Lower Hudson Valley. Principally from observations taken at Riverdale, N. Y.” In this article, the author entirely confirms Mr. Allen’s views concerning the Carolinian Fauna in Southeastern New York; proving that the lower Hudson, about Riverdale (near New York City), is furnished with a considerable number of species, many of them quite common summer residents, which belong strictly to that division of fauna, known to ornithologists as the Carolinian. Mr. Bicknell remarks:—

“The boundaries of faunal areas are usually of an extremely irregular nature, and in their territorial relations contiguous faunæ often present a series of mutual inter penetrations, the apparent invasion of one province of an adjoining district of course being coincident with an opposite extension or penetration of the invaded territory. Thus from near the northeastern boundary of the Carolinian Fauna two main branches emanate,—one striking up into the valley of the Hudson; the other extending along the Connecticut coast and into the Connecticut valley, through which reaching the Massachusetts border. The relations between these two tributaries at their junction with the main body of the fauna to which they belong, or their consolidation before reaching that point, is at present but very superficially understood; but from what knowledge we have in the matter it would

² Zoology of New York, Part I, Mammalia, Preface, p. 10, 1844.

³ Transactions of the Connecticut Academy, Vol. IV, pp. 1 to 150, 1877.

⁴ Am. Nat., Vol. VII, No. 11, p. 693, Nov., 1873.

⁵ Bull. Mus. Comp. Zool., Vol. II, pp. 393, 394, April, 1871.

appear that their interception occurred somewhere near the mouth of the Hudson, thus including New York city and vicinity in the angle formed by their divergence. The northern limit of the Hudson River branch is as yet undetermined."

Then follows an enumeration of the species, belonging to this category, which Mr. Bicknell has discovered in the neighborhood of Riverdale, which are as follows: *Mimus polyglottus* (Mocking Bird); *Lophophanes bicolor* (Tufted Titmouse); *Thryothorus ludovicianus* (Carolina Wren); *Helmintherus vermivorus* (Worm-eating Warbler); *Helminthophaga pinus* (Blue-winged Yellow Warbler); *Helminthophaga chrysopтера* (Golden-winged Warbler); *Oporornis formosus* (Kentucky Warbler); *Myiodioctes mitratus* (Hooded Warbler); *Stelgidopteryx serripennis* (Rough-winged Swallow); *Cardinalis virginianus* (Cardinal Red-bird); *Corvus ossifragus* (Fish Crow, seen, but not captured); *Empidonax acadicus* (Acadian Flycatcher); and *Strix flammea* (Barn Owl, seen, in New York city, by Mr. H. B. Bailey).

That this Carolinian tinge extends for a considerable distance up the Hudson, not only to the Highlands, but through, and a little beyond, I shall be able to show in the following list. Unquestionably, we owe to the Hudson River the possession, as abundant summer residents, of such species as *Helmintherus vermivorus*, *Helminthophaga pinus*, *Siurus motacilla*, *Icteria virens*, and several other species, which accession gives to our avi-fauna its Carolinian tinge; it belonging, otherwise, to the division of country known as the Alleghanian Fauna.

To map out the exact dividing lines of the different faunal areas, is one of the most important and attractive branches of zoological research; while the labor of determining the precise range of habitat for each species, is, indeed, an arduous task, and one that, from its importance, must claim a large share of the attention of our ornithologists for many years to come.

The present list of our birds is intended to embrace only those species which have actually been captured within the described limits; or those which have been seen under circumstances which admit of not the slightest doubt of the accuracy of the observations. To this enumeration is appended a separate list of the species whose occurrence is probable—especially such as have been observed in contiguous districts.

It seems unnecessary to discuss, at any great length, the problem of the extinction of a number of species that were formerly abundant; but are not now to be found at all within our limits. I will, therefore, simply mention that several species have only disappeared within the past few years, while others have long since passed away. Among the former, were two of our most prized game birds, the Wild Turkey (*Meleagris gallopavo*), and the Pinnated Grouse or Prairie Chicken

(*Cupidonia cupido*), both of which were given by DeKay, in 1844, as still occurring in New York. Of the Wild Turkey he wrote:⁶ they "as I am well informed, are now only found in the counties of Sullivan, Rockland, Orange,⁷ Alleghany and Cattaraugus." Of the Prairie Chicken:⁸ "A few are still said to linger about Orange county in this State." Among the latter class may be mentioned the Great White Pelican (*Pelecanus trachyrhynchus*), which was formerly numerous on the Hudson, and other rivers and lakes in this State.

I take this means of expressing my warm gratitude to all who have assisted in this work. To the following gentlemen my thanks are especially due: Mr. Eugene P. Bicknell, of Riverdale; Mr. C. H. Simpson, of Peekskill; Dr. A. K. Fisher, of Sing Sing; Mr. Peter de Nottbeck, of Fishkill Landing; Mr. Josh Ward, of Cornwall, for many valuable specimens and much information concerning our aquatic birds; and to Prof. J. A. Allen and Dr. C. Hart Merriam for their kind assistance in various ways. To Mr. Wm. Church Osborn, of Garrisons, I am particularly indebted for much valuable material; and for the use of the MSS. notes of his brother, my late lamented friend and fellow laborer in this field, Frederic S. Osborn.

It has been thought worth while to introduce, in condensed form, the results of extensive tables of measurements of more than 1,900 specimens, that I have collected in the Highlands. The average dimensions of each species will be given, and any remarkable variations noted.

A. List of all the species known to occur in the Hudson Highlands; giving the times of occurrence and their relative abundance, with notes on the habits.

Family, TURDIDÆ.

1. *Turdus migratorius*, Linné. ROBIN. An abundant summer, and less common, winter resident; breeds abundantly.

The Robins usually place their nests on trees, but this is by no means the situation always chosen. I have noticed them in various other locations. One was placed on the top of a stump, at an elevation of fifteen feet; another on a stump chopped close to the ground. About civilization, the nests are often placed on the rail-fences. Beams in barns and dilapidated out-buildings often furnish them with sheltered and comfortable places, wherein to establish house-keeping; so comfortable, in fact, that they are loath to leave them, and so return every spring to their old quarters. In some instances the identical

⁶ Zoology of New York, Part II, p. 200, 1844.

⁷ Italics my own.

⁸ Same work, p. 206.

site of the last summer's nest is selected for the new one, but, as their economy and habits of cleanliness do not permit them to occupy the same nest a second season, the old one is thrown down, and a new one built in its place. This, however, is often impossible, for the Robins, though less artistic architects than some other birds, build such substantial nests, that their masonry is capable of withstanding the winds and storms of several seasons, after the builders are through with them; hence it is sometimes impossible for the birds to make much impression on the hardened walls, and, in such cases, if no equally pleasant situation is at hand, a second nest is constructed on top of the first, making a two-storied residence. It sometimes happens that a third structure is deposited above that, on the succeeding season, though I have known of but one such instance. I once saw a nest that was built on a brace, or ornamental support, of the building at which toll is collected, on the American side of the Niagara suspension bridge, in a much frequented situation; attracting not a little attention from the numerous visitors. If courteously received, Robins will become quite familiar and friendly. On more than one occasion, I have known them to build upon a piece of timber, just above the door of a dwelling, beneath the porch, where, in one instance, a number of noisy children were frequently playing beneath. Lieut. Willis Wittich, of Fort Klamath, Oregon, writes me that the Robins there build their nests on the prairies, on the ground, or, if in the timber, low down. I have seen an approach to these habits in our eastern bird. I was shown (by my friend, Mr. Wm. Church Osborn, to whom I am indebted for many valuable observations noted further on) a nest built on the ground, in a hollow in the side of a sloping bank by the roadside. I discovered another nest that was placed in a tangled thicket of matted vines and bushes, quite close to the ground.

All of the nesting sites mentioned above are unusual, and only go to show how great an amount of variation is observable in the habits of any species, when a sufficient number of individuals is examined; of course these minor differences in traits or habits are greatly enhanced if our observations be made to extend over widely differing areas of the bird's habitat.

Robins commence laying early in May. Five nests were found, containing five, three, four, one, and four eggs, respectively, on May 11th, 1872; in 1873, the first nest seen contained a single egg on May 6th; on May 4th, 1874, the first nest was discovered, containing four eggs. In warm, early seasons, the birds begin to nest at an earlier period than usual; thus, during the remarkably advanced spring of 1878, I observed that a pair of Robins were engaged in constructing a nest as early as the 15th of April, and, on the 27th of the same month, a nest was found, containing the full complement (four) of eggs.

Among the Robin's worst enemies may be ranked the Red Squirrels (*Sciurus hudsonius*), for, though their young are subject to the attacks of Crows, Jays, and particularly to the ravages of the Black Snake (*Bascanion constrictor*), yet none of these enemies inflict as much injury as the Squirrels, because, not only do they seek out and devour the eggs, but the young are also eaten; and their numbers are in great excess. But the Robins are very brave in defending their progeny, and endless are the battles that take place between them and the Squirrels. One of these tragedies took place right in front of my house, on the 6th of June, 1873. Within my recollection no year has elapsed but that a pair of robins nested in a certain evergreen (*Abies excelsa*), close to my residence. On the morning in question, a Red Squirrel came a considerable distance out of the woods, ascended to this nest, and would have destroyed all the young ones, had not the parent returned just at the critical moment. The enraged bird dashed furiously at the marauder, assaulting it in such a manner as to dash it to the ground, where the struggle was renewed, and kept up, till the Squirrel reached the trunk of a maple-tree, and quickly disappeared among the branches, when the Robin returned, triumphant, to resume the care of her little ones, all but one of which were safe.

In early spring they feed largely upon earth worms, and may be seen standing erect upon the lawn, listening intently for their prey. On the government reservation, at West Point, they are abundant. Often during drills, they drop down upon the velvety grass of the parade ground, where, from their erect posture and bright colored breasts, they are exactly in keeping with the military aspect of their surroundings.

They are rather scarce winter residents throughout the Hudson Valley; occurring at least as far north as the northern limit of the red cedar (*Juniperus virginiana*), perhaps much farther. In the Highlands, sizable flocks generally remain all winter amongst the cedars, in sheltered localities, near the Hudson River. Their abundance does not seem to depend upon the severity of the winter, for they are quite as numerous in cold, as in warm, seasons. Very few were seen during the winter of 1877-78, which was the mildest I have ever experienced. The wintering birds affect only certain favorite spots, where they subsist mainly upon the berries of the sumach (*Rhus typhina*) and red cedar. I have seen quite a number of partial albinos. When domesticated, they are especially subject to variations in color. A Scotch cobbler, in Highland Falls, had a very old Robin, which in old age became nearly white. My gardener's child has had one for several years; before its last moult its colors were very dark and peculiar but since its moult it has become partially white.

Dimensions.—Average measurements of nine specimens: length,

10·03; stretch of wings, 15·95; wing, 4·96; tail, 3·87; bill (culmen), ·84; from anterior margin of nostril, ·53; tarsus, 1·26. The winter residents give larger measurements than the summer residents. A very fine male, shot March 3rd, 1875, measured as follows: length, 10·49; stretch, 16·32; wing, 5·31; tail, 4·12. Another remarkably fine male, shot April 30th, 1878, measures: length, 10·10; stretch, 16·25; wing, ·5; tail, 3·05. These specimens represent the extremes of both seasons.

2. *Turdus mustelinus*, Gmelin. WOOD THRUSH. A common summer resident; breeds abundantly. Arrives about May 10th (May 13, 1874; 10, 1875; 8, 1876; 7, 1877; April 30, 1878).

The Wood Thrush is our best songster. We have no other bird whose song can be compared with its. It is sometimes found in gardens, about residences, and again, it is found in the deepest solitudes of the forest, its manners differing proportionately to its different habitations; but in general it is gentle and unsuspicious if not disturbed. It commences to lay quite soon after its arrival. A nest was found containing three eggs on May 17th, 1873, and on May 11th, 1878, several nearly completed nests were examined, besides one containing an egg. It stays until the last of September (September 25, 1874; October 5, 1875; September 20, 1876; 30, 1878).

Dimensions.—Average measurements of six specimens: length, 8·29; stretch, 13·70; wing, 4·44; tail, 2·92.

3. *Turdus pallasi*, Cabanis. HERMIT THRUSH. Very abundant through the migrations. A few sometimes winter. Arrives from the South about the 1st of April (March 26, 1872; April 8, 1873; 14, 1874; 2, 1875; 21, 1876 [not seen again till May 2]; 22, 1877; 15, 1878). It remains here until sometime in May (April 30, 1875; May 3, 1876; 12, 1877; April 26, 1878). Returning, in autumn, it arrives from the North early in October (15, 1876; 7, 1877), remaining till about the 1st of November (9, 1874; October 28 [or later], 1876).

The Hermit Thrushes remained here throughout the severe winter of 1874-75, when birds of the Canadian Fauna, such as the Pine Grosbeak (*Pinicola enucleator*), the two Crossbills (*Loxia curvirostra*, var. *americana*, and *L. leucoptera*), and the Lesser Redpolls (*Aegithus linaria*) were very numerous. They inhabited the cedar groves, near the river, in company with the Purple Finch (*Carpodacus purpureus*). They were always quite silent, except for the utterance of an occasional low *chuck*; this note, in autumn, is sometimes so loudly repeated as to remind one of the Blackbird's. A few of these wintering birds were seen as late as March 20th, and the regular migrants appeared April 2nd. They have been observed in winter at several places lower down the Hudson.⁹ Except the Robins, they are the

⁹ See article in Bulletin of the Nuttall Club, Vol. IV, p. 34, January, 1879.

hardiest of their family, but the following extract from my note book will show that, by a premature migration northward, they are sometimes exposed to sudden inclemency of weather, and suffer severely:—

"April 28th, 1874. Last night we had a heavy fall of snow and sleet. The Hermit Thrushes, Blackbirds, etc., have become so reduced by hunger and cold, that they come quite freely into the house and stable. A number of species were captured in the kitchen and barn, as follows: *Turdus pallasi*, *Spizella socialis*, *S. monticola*, *Junco hyemalis*, *Melospiza melodia*, and *Agelæus phœnicens*."

Though not a timid bird, the Hermit Thrush generally selects solitary abodes. If these are invaded by man, its actions betoken more of curiosity, than alarm. Late in October, 1877, while walking from here to New York city, in company with my friend, Mr. I. F. Lockwood, we were induced by a sudden deluge of rain to seek shelter beneath some hemlocks, near Tarrytown; there we were highly entertained by the quaint manners of a Hermit, that had chosen that dimly lighted spot for its residence, and that seemed by no means pleased to make our acquaintance; showing its resentment at our ill-mannered intrusion upon its privacy by repeating, in a complaining tone, its single "chuck"; occasionally alighting close beside us, it would give a sharp, almost spiteful emphasis to its utterance; then it would fly away, and return again hopping on the ground, occasionally stopping short, cocking its head sidewise, and ogling us with such a ludicrous expression, that we were induced in a measure to forget our disagreeable situation, and indulged in a hearty laugh.

Dimensions.—Average measurements of fourteen specimens: length, 7·17; stretch, 11·45; wing, 3·56; tail, 2·74.

4. *Turdus swainsoni*, Cabanis. SWAINSON'S THRUSH. Very common during the migrations. It is met with in May (May 11 to 31, 1875; 9 to 28, 1876; 15, 1877; 10 to 27, 1878), and in the fall from September 12th to October 19th (1876).

In spring they are very abundant in the woods and orchards, uttering a note that sounds like the bursting of an air bubble on rising to the surface of a fluid. In autumn they are found in deep woodlands, feeding, in company with many other birds, on the berries of the sour gum (*Nyssa multiflora*) and dog-wood (*Cornus florida*).

Dimensions.—Average measurements of thirteen specimens: length, 7·17; stretch, 12·11; wing, 3·93; tail, 2·76; bill (culmen), .50; gape, .79; tarsus, 1·17; middle toe, .62; its claw, .22.

4a. *Turdus swainsoni*, var. *aliciae* (Baird). GRAY-CHEEKED THRUSH. Abundant with *T. swainsoni* during the migrations. It appears to arrive later, both in spring and fall, than that species. Found during the latter half of May, and from September 23rd (1878) to October 19th (1876).

The only note I have heard from this species, in spring, is a peculiar

bubble-bursting sound, like that produced by the Olive-backed Thrush; but in the fall they utter a low note resembling the common cry of the Brown Creeper. In autumn, they are found inhabiting the thickest woods, where they feed upon the berries of the sour gum, or "pepperidge" (*Nyssa multiflora*), dogwood (*Cornus florida*), and the frost grape (*Vitis cordifolia*); but they are especially fond of the ripe berries of the common pokeweed or pigeon-berry (*Phytolacca decandra*), upon which they soon grow very fat, as do the Robins. They are very shy, and, when frightened, fly a long distance before alighting, when they remain perfectly quiet for some time, rarely taking another flight; for this reason they are very hard to discover, so that a woods may sometimes abound with them, when none are visible to an ordinary observer. When perched, they assume a very erect posture, and present an appearance of alert wariness corresponding to their wild habits.

They are generally quite readily distinguishable from *T. swainsoni*, though by exactly what characters it is hard to explain, when the markings are not distinguishable.

Dimensions.—Average measurements of fourteen specimens: length, 7·58; stretch, 12·70; wing, 4·09; tail, 2·96; bill (culmen), .55; gape, .82; tarsus, 1·25; middle toe, .68; its claw, .25.

5. *Turdus fuscescens*, Stephens. TAWNY THRUSH; WILSON'S THRUSH. A rather scarce summer resident; breeds. Arrives early (May 5, 1876; 15, 1877; 8, 1878).

Wilson's Thrush is only common here during the spring migrations. It is occasionally seen during the breeding season, but not abundantly. A pair has nested for several successive seasons, on Constitution Island, close to the house of the Misses Warner, where they are very welcome guests. Miss Warner described its song to me as one of surpassing sweetness.

On their first arrival from the South they are very shy, staying in the thickest under-growth in the deep woods; but soon they come flocking familiarly about the house, and for a time the blossoming orchards are filled with them. After several weeks, however, they nearly all move further north, a few, only, remaining to breed, removing to the darkest solitudes of the woods, in single pairs. Then I have found them shy, and their nests I have failed to discover. Lower down the Hudson, this species is more abundant in summer, and breeds very commonly.

Dimensions.—Average measurements of five specimens: length, 7·52; stretch, 11·95; wing, 3·84; tail, 2·87; bill (culmen), .53; gape, .85; tarsus, 1·17; middle toe, .68; its claw, .22.

6. *Mimus carolinensis*, (Linné). CAT-BIRD. A very common summer resident; breeds. Arrives early in May (May 4, 1872; 10,

1874; 9, 1875; 8, 1876; 11, 1877; April 27, 1878), departing late in October (October 16, 1874).

Immediately after their arrival, they are heard singing in thickets, and soon they commence nesting. I found them with eggs—one nest containing two and another four eggs—as early as May 15th, 1878. Like the rest of the family, they are fond of most kinds of berries, of which their food mainly consists, in autumn. Their nests are usually placed in bushy thickets, and are loosely built of sticks and whatever soft lining material is available. I have seen a handsomely embroidered handkerchief, and a lady's escaped "frizzes," thus turned to account by them. But their eggs are of a deep emerald-green, uniform in color, the most beautiful that we have.

Dimensions.—Average measurements of four specimens: length, 8·94; stretch, 11·59; wing, 8·54; tail, 3·65; bill from nostril, ·48; tarsus, 1·10.

7. *Harporrynchus rufus*, (Linné). BROWN THRASHER. An abundant summer resident; breeds. Arrives the first of May (April 26, 1872; May 8, 1873; 5, 1874; April 30, 1875; 30, 1876; May 1, 1877; April 27, 1878), departing in October (October 8, 1876; 9, 1878).

Its presence is first announced, in spring, by its loud, sweet song, forcibly reminding one that spring has really come, for spring can scarcely be said to have begun till the trees commence to unfold their blossoms; and it is followed in a few days by the sweetest notes we ever hear—those of the Wood Thrush.

The Brown Thrashers seem to be mated immediately after their arrival from the South, and they soon begin to build their nests. So joyous are they at this season, that their song is heard all day long. Even when engaged in the matter-of-fact occupations and duties that pertain to setting up housekeeping, when bustling and scratching amongst the leaves and rubbish, for the materials for their nests, they are observed to pause, at intervals, to sing. But they are best heard in the early morning, at daybreak; then the males mount to the top-most bough of some tree, surrounded by the brushwood that they inhabit, and, with tail dropped and wings slightly drooping, they give expression, in their song, to an ecstasy of joyous emotion; the strain is taken up and repeated by the different performers, and comes to the listener from various directions and distances, mingled with the notes of the other woodland songsters, and harmonizing with the various sights and perfumes, all of which unite to produce that happy combination—a country May morning.

The nest is usually placed on the ground, in some spot that is well adapted for concealment; but sometimes a low bush or clump of matted vines is selected instead, or, rarely, it is placed in a tree, at a considerable height. I found their nest containing the full complement of

eggs May 24th, 1873, and another May 25th, 1878, that contained five young birds.

Dimensions.—Average measurements of five specimens: length, 11·42; stretch, 12·79; wing, 4·06; tail, 5·03; culmen, .96; gape, 1·31; tarsus, 1·31.

Family, SAXICOLIDÆ.

8. Sialia sialis, (*Linné*). COMMON BLUEBIRD. A resident species; abundant in summer. The migrants arrive early in February, when they are in full song, and depart by the first of December. I have found Bluebirds here throughout the coldest winters, as that of 1874-75, and they are generally quite numerous in milder ones. They then feed on berries, and what insects they can find. They are nearly silent in severe weather, only uttering a low, soft note, inaudible at a little distance; and as they leave their perches, when frightened, a queer little chirrup of alarm; but when the weather is warm they become quite frolicsome, and chase one another, uttering a sharp, rapid twittering, that reminds one of the Kingfisher's rattle.

They breed abundantly, and several times during the season, building their nests in holes in trees, and in the houses prepared for them; they always occupy the two pound tomato cans that I have placed for their use about the premises, but from which, however, they are sometimes ejected by those quarrelsome little free booters—the House Wrens. The eggs of their first brood are deposited very early. A nest found April 16, 1872, contained eggs, and again, one was found April 28th, 1873, which contained four eggs. They were building April 18th, 1877, and the young left the nest May 29th. Young were found, about a week old, April 22nd, 1878, and they were incubating the second brood May 22nd. A note in my journal reads as follows: "A pair has constructed its nest in the limb of an old cherry tree, in a hole excavated by a Downy Woodpecker (*Picus pubescens*), last winter; its orifice is so small that it is with great difficulty that the bird enters. I saw the male bird feeding the mother at the entrance to their house."

Dimensions.—Average measurements of twelve specimens: length, 7·01; stretch, 12·53; wing, 3·93; tail, 2·58; culmen, .47; gape, .75; tarsus, .75.

Family, SYLVIIDÆ.

9. Regulus calendula, (*Linné*). RUBY-CROWNED KINGLET. Abundant during the migrations. Arrives about the middle of April (April 23, 1873; 7, 1874; 15, 1875; 17, 1876; 13, 1877; 15, 1878), departing about the middle of May (May 9, 1874; 18, 1875; 12, 1876; 8,

1877). On its return in autumn, it is with us from September 22nd (1874) to November 2nd (1874).

In the spring, the Ruby-crowned Kinglet is one of our earliest singing migrants. It is found in great numbers in the evergreen groves, and in bushy places besides the lakes and streams. Its song is one of the sweetest, and much louder than would be supposed, coming from such a little bird.

Dimensions.—Average measurements of eleven specimens: length, 4·41; stretch, 7·01; wing, 2·24; tail, 1·73; culmen, .29; tarsus, .67.

10. Regulus satrapa, Licht. GOLDEN-CRESTED KINGLET. An abundant winter resident. Is present here from the first of October (October 3, 1876; September 28, 1878) till May (May 4, 1875; 7, 1877). The Golden-crested Kinglet has a feeble, but quite pretty song, in the spring, and in winter it makes a jingling noise, as it rustles about among the evergreens, in company with the Chickadees (*Parus atricapillus*), Nuthatches (*S. S. canadensis* and *carolinensis*), and Brown Creepers (*Certhia familiaris*); it also has a note resembling the common one of the Brown Creeper.

In the fall this delicate species and the preceding are associated together. They then are seen in great numbers, frequenting the edges of ponds and streams, running about over the mud and weeds, in search of food. They throng the river flats, at low tide, searching amongst the sea-weeds for minute molluscous animals, upon which they feed with great avidity. I can recall no prettier sight, at the present moment, than that presented by these great flocks of ruby, and golden-crested little birds, as they hop about upon the seaweed, by the riverside, in the month of October. A Kinglet that I wounded in the woods and brought home, was very tame; it was perfectly gentle from the first, showed no signs of fear, and ate bread, soaked in milk, almost immediately. On being allowed the range of the room, it at once commenced the destruction of the insects that infested our house plants.

Dimensions.—Average measurements of fourteen specimens: length, 4·07; stretch, 6·75; wing, 2·14; tail, 1·75.

Family, PARIDÆ.

11. Parus atricapillus, Linné. BLACK-CAPPED CHICKADEE. A common, resident species; breeds. They are gregarious, affecting all kinds of woods, but, in winter, are generally found in the evergreens. Large flocks are seen rustling among the reeds of the salt marshes, in spring. I have sometimes seen straggling flocks of Chickadees flying across an open space in the forest, uttering their rare cry of *phēbē* high in the air as they passed overhead. This curiously whistled note sometimes breaks the winter stillness of the woods; and its authorship has been a puzzle to many persons.

They nest in holes in trees. Their eggs, six or eight in number, are deposited early in May. They generally select solitary places for nesting, and are particularly attached to the stunted oak-trees that grow on the mountain tops, and ledges, near the river. On May 11th, 1876, I found a pair of Chickadees that were building their nest in a hole, in a tree that stood in a swamp. The birds were collecting materials for its construction. They gathered a sort of cottony fuzz that grew upon the stems of some tall ferns; alighting at the bases of these plants, they ascended, gleaning, to the very tops, which often bent down under their weight until they touched the water, when they flew to another plant. In this way they gleaned among the ferns until they had accumulated bundles of this substance in their bills, as large as hickory nuts, before depositing it in the tree. Both male and female were working at once. Their timidity often leads them to build their nests in the middle of a stream or morass. Of man, however, they have little fear. Being very fond of flesh, a strip of meat fastened to the porch, is quite sufficient an attraction to bring numbers of them about the house. I have been amused to see them taking liberties with the salted mackerels that the farmers hang out of doors to make them sweet. They are hardy, vivacious little birds, often coming about the dwellings, where their sprightly manners and cheery notes make them familiar to all. They have quite a variety of notes, and among them a very singular love note that I first heard April 30th, 1878. I saw two of them feeding in a pine-tree, by the river, that attracted my attention by a singular shivering note that was quite new to me. They were caressing one another, and, at the moment of utterance, were passing food from one bill to another. On search, I discovered their nest, which was placed in a decayed branch of an oak-tree, on the edge of a cliff. I sometimes see Chickadees in New York city. I recollect one morning, walking up Broadway, I heard the characteristic *tshe-de-jay*, *tshe-de-jay*, close at hand. I looked about me, but could see nothing of the bird, and began to wonder whether my own thoughts had not translated me from the bustling street into the country woods; but, as I paused, I heard it again, this time its unmistakable '*tshe, dāigh dāigh dāigh*'; looking overhead, I saw my friend, Parus, perched upon a telegraph wire, critically examining the numerous strands, that formed a network over the street; occasionally desisting from this important employment, he would take a cool survey of the scene below; the prospect in the street evidently pleased him, and the color and bustle had an exhilarating effect on his spirits, so that he would burst forth into a voluble expression of his approval of the goings-on in the great thoroughfare, and it was this that at first attracted my attention.

Dimensions.—Average measurements of thirteen specimens: length, 5·27; stretch, 8·02; wing, 2·53; tail, 2·43; culmen, ·87; tarsus, ·60.

A LIST
OF THE
BIRDS OF HUDSON HIGHLANDS
WITH ANNOTATIONS.

PART II.

BY EDGAR A. MEARNs.

[From the BULLETIN OF THE ESSEX INSTITUTE, Vol. XI, page 43.]

A List of the Birds of the Hudson Highlands, with Annotations.

BY EDGAR A. MEARNs.

[Continued from Vol. X, page 179.]

Family, SITTIDÆ.

12. Sitta carolinensis, Gmelin. WHITE-BELLIED NUTHATCH. Perhaps a resident species, though not found breeding just in this neighborhood. Farther up the Hudson, at Catskill, they breed abundantly. Their occurrence is somewhat irregular, like that of the Brown Creeper and the Cedar Bird; but they are usually common except during the breeding season, when they, seemingly, all withdraw for a short time. It is a remarkable fact, that not a single White-bellied Nuthatch was seen here, by any one, to my knowledge, between August, 1872, and the following July. Mr. Erwin I. Shores mentions a similar incident in the case of the Common Bluebird.¹ He states that he "could not find it in 1872,"² about Suffield, Conn. Mr. W. C. Osborn discovered a nest of this Nuthatch, near Catskill, N. Y., the entrance to which was through an aperture in a weather-board, in the house of Mr. Frederic E. Church, the celebrated artist.

The Nuthatch is an eminently useful and industrious bird. He devotes his entire existence to the occupation of scrambling about upon the tree-trunks, grubbing out insects from their hiding places under the bark. At this commendable, but somewhat prosaic, employment he spends his days; and when night comes, he betakes himself to a hole in some tree, where, weary with his day's toil, he sleeps the sleep of the just till day-break; nor is our pretty friend addicted to the disagreeable practice of early rising. He depends not upon craftiness for his daily sustenance, but gets it by the sweat of his brow; therefore he indulges in a morning nap after the sun is up, and the nocturnal worm is permitted to crawl safely into its den. Doubtless this interesting bird should command our highest respect, and our deepest gratitude; for his life is one of tireless industry and great usefulness. Nor, indeed, should we question the personal motives which impel him to the accomplishment of such important and valuable results.

¹ C. Hart Merriam, A Review of the Birds of Conn., p. 8, 1877.

² Mr. Shores informs me that the date here given is incorrect; should read 1873.

Though the Nuthatch does not possess the gift of song, still he is well and favorably known to most persons who live in the country—whose lines have fallen in pleasant places. He is found wherever there are forests, and comes into our orchards and about our dwellings. Moving steadily in any direction upon the tree-trunks and branches, he searches the interstices of the bark, tapping hard upon suspected spots with his bill. At frequent intervals he utters his peculiar cry, a sort of nasal *höenk höenk*. When moving downward, he always advances head first, and never in the opposite position, as the Woodpeckers do. Sometimes his diet is slightly varied. He never refuses raw meat; and when in Lewis County, N. Y., during the latter part of December, 1877, I found him eating the beech-nuts, in company with the Red-headed Woodpeckers, and with evident enjoyment. The stomachs of the specimens shot were found distended by those nuts.

Sometimes, during storms, in winter, the trees become so thickly coated with ice, that the Woodpeckers and creeping birds, since nature has neglected to supply them with adjustable ice-spurs suitable for such emergencies, are unable to climb upon the icy trees, and, consequently, are obliged to desist from their usual avocations, and betake themselves to other situations in quest of food. On such occasions the Nuthatches seem to be particularly distressed, flying about uttering loud cries, and alighting freely upon the roofs of buildings. Both this species and the Red-bellied Nuthatch have a loud, coarse rattle as the mating season approaches, which is seldom heard at other times.

Dimensions.—Average measurements of eight specimens: length, 6·07; stretch, 11·03; wing, 3·48; tail, 1·92; culmen, .76; gape, .90; tarsus, .70.

13. Sitta canadensis, Linné. **RED-BELLIED NUTHATCH.** The movements of this species are extremely uncertain; but it may be set down as an irregular winter resident, and an occasional visitant at other seasons, except during the period of its nidification. Generally abundant during its autumnal migration. At times it is gregarious; and this is especially the case in the fall.

Late in summer the Red-bellied Nuthatches arrive in large flocks, some seasons, while in others they are not seen at all, or only occasional individuals. These migrating flocks appear late in August, and a few are sometimes observed by the first of that month. They remain with us for a period varying from a few days to several weeks. In 1874, they were very numerous from August 25 to September 23. They search the tree trunks for their insect prey, in large, straggling bands, uttering a note somewhat resembling the cry of the other species (*S. carolinensis*); but it is pitched much higher, and varied

by low, lisping, wiry notes, which are only audible at a short distance. They are partial to the groves of red cedar, but are frequently found, in flocks, in the deciduous woods; there they are generally attended by numbers of small flycatching birds, chiefly of the genera *Vireo* and *Empidonax*, which follow, apparently for the purpose of capturing the insects which are roused from the bark. They are of irregular occurrence throughout winter. Were very abundant in March, 1874, when large flocks were seen amongst the pine trees, along the Hudson, chasing each other through the forest with loud, rattling cries, and rollicking together in a most joyous and *uncreeper-like* manner.

Dimensions.—Average measurements of nine specimens: length, 4·62; stretch, 8·22; wing, 2·66; tail, 2·58.

Family, CERTHIIDÆ.

14. Certhia familiaris, Linné. BROWN CREEPER. An abundant, but somewhat irregular winter resident, and indeed is found commonly throughout the year, except during the nestling period, during which none have been observed, though it remains till late in May. The Creeper is partial, in winter, to the evergreens, as indeed are most of our small wintering birds. It possesses, besides the usual prolonged, wheezy note of which the species is by no means chary, a variety of feeble, chirping utterances, resembling those of the Golden-crested Kinglet. The Creeper is usually a tame bird, paying less heed to its admirers than to the capture of insects that infest the bark of trees; that being the main purpose of its life. With that object in view, it alights at the base of a tree and begins to ascend in a spiral; in this manner it advances till the trunk and principal branches have been explored, when, having reached the top, it spreads its wings and with a pretty, sweeping movement, attaches itself to the extreme base of another tree, when the same performance is repeated. Thus the Creeper has many ups and downs in its life, though, on the whole, its is a monotonous career of labor; but in spite of this the bird is interesting, and its habits have a certain fascination. Its sombre colors serve an excellent purpose for concealment, matching so well those of the trees upon which it lives as to make it very inconspicuous.

Its long, slender, curved bill seems ill adapted as a means of musical expression; and indeed I never suspected it of possessing such attributes, until I one day discovered that it was the author of a very pleasant song. This happened on April 1, 1878, when I heard a sweet warble, moderately loud, that puzzled me as to its authorship, until I at length saw the bird singing, quite close to me, as it clung to the side of a tree. Like the Nuthatches and Titmice, it is fond of raw

meat, and may be attracted to houses by suspending a scrap of pork from the balcony.

Dimensions.—Average measurements of eighteen specimens: length, 5·66; stretch, 7·98; wing, 2·56; tail, 2·65; culmen, .63; tarsus, .53.

Family, TROGLODYTIIDÆ.

15. *Troglodytes domesticus*, Bartram. HOUSE WREN. A summer resident; abundant. Like the Bluebirds, they like to build in the fruit cans that I have placed in appropriate places for their use. As many as twelve pairs have nestled upon the place at once. Nothing could present a greater contrast than the habits of these birds during the breeding season and afterwards. Having successfully completed the business of rearing several broods of young, they lose, simultaneously, their delicious song and the pert, saucy familiarity which characterizes their actions during their stay in close proximity to man; retiring with their families to the remotest wastes, they spend the residue of the season amongst the broken rocks, covered thickly with bushes and matted vines, seldom appearing in view, but constantly announcing their whereabouts by a sharply enunciated, seemingly discontented or anxious *chirp*.

These Wrens arrive from the South late in April (28, 1873; May 7, 1874; 6, 1875; April 29, 1876; May 9, 1877; April 30, 1878; 29, 1879), and remain till the middle of October (16th, 1876).

Dimensions.—Average measurements of seven specimens: length, 5·00; stretch, 6·61; wing, 1·97; tail, 1·71; bill from nostril, .36; tarsus, .66.

16. *Anorthura troglodytes*, var. *hyemalis*, (Wilson). WINTER WREN. A winter resident; very abundant during its autumnal migration; generally quite common all winter, but somewhat irregular; arrives the first of October (4, 1874; September 29, 1876; exceedingly abundant October 8), and departs the last of April (27, 1874; 30, 1875; May 1, 1876). Mr. E. P. Bicknell informs me that he has observed it, as far south as Riverdale, on May 4, 1877.

These active, sprightly little birds are fond of searching amongst broken rocks, brush-heaps, and rubbish generally; but it is their greatest delight to run about under ice, after the water has settled away; creeping into every nook and crevice in search of food, they sometimes remain out of sight for many minutes together. They are often found on the marshes, amongst the cat-tails, and frequenting the piles of débris that the tides have floated upon their edges; here, skulking out of sight, but close to the observer, and always emitting a sharp *chirp*, they would exhaust the patience of the mildest collector extant, who would shoot one for his cabinet.

Dimensions.—Average measurements of seven specimens: length, 4·06; stretch, 6·15; wing, 1·89; tail, 1·24; bill from nostril, 35; tarsus, ·73.

17. Telmatodytes palustris (Bartram). LONG-BILLED MARSH WREN. A common summer resident; breeds in the marshes bordering the Hudson. Arrives about the middle of May (21, 1875; 18, 1876; 21, 1877; 4, 1878), and remains till October (1, 1874; September 28, 1876; 23, 1878). This species has the habit of singing at night, when the moon is bright. Its eggs, six to eight in number, are deposited about the first of June. They are of a deep mahogany color; sometimes a light colored egg is found in the same clutch. The nest is spherical, with a round orifice for entrance at the side. It is attached to the reeds of the salt marshes, and is constructed partly of these same flags ("cat-tail," *Typha latifolia*, Linn.), and partly of the marsh grasses; the interior lined with the down of the flag. The eggs are kept covered till the full complement has been laid; possibly as a protection against snakes. They breed at least twice in a season, occupying a fresh nest each time. I examined several nests, on Consook Island, which contained fresh eggs, as late as July 20, 1878. These were probably third broods. The House Wrens left our piazza with their third brood August 15.

The Marsh Wrens live in colonies, and are as attractive, merry little birds as you could wish to see; scolding hard when their retreats are invaded, but singing a joyous, happy refrain the moment you pass on. Even when scolding most irately, you may hear them, between times, trying to swallow the gurgling notes that seem to well forth spontaneously and against their wills. There are few sounds so cheerful and pleasant to hear as the jingling melody produced by a colony of Marsh Wrens left in quiet (?) possession of their oozy territory, after such a disturbance.

Dimensions.—Average measurements of seven specimens: length, 5·20; stretch, 6·52; wing, 1·95; tail, 1·68; bill from nostril, ·42; tarsus, ·81.

Family, ALANDIDÆ.

18. Eremophila alpestris, (Forster). HORNED LARK. Mr. Jas. S. Buchanan, of Newburgh, informs me that this species often occurs about Cornwall and Newburgh. None of the other collectors have met with it in the Highlands, as most of the region is unsuited to its wants.

Family, MOTACILLIDÆ.

19. Anthus ludovicianus, (Gmelin). AMERICAN PIPIT; TIT-LARK. Occasionally seen during its migrations. Messrs. William K.

Lute, and Thos. W. Wilson, found large flocks on the salt meadows connecting Constitution Island with the east shore, in October, 1875. I saw a large flock, at Fort Miller, Washington County, N. Y., on November 9, 1876.

Dimensions.—Length, 6·38; stretch, 10·25; wing, 3·50; tail, 2·69; culmen, ·47; tarsus, ·81.

Family, SYLVICOLIDÆ.

20. Mniotilla varia, (Linné). BLACK AND WHITE CREEPING WARBLER. A common summer resident; breeds; particularly numerous during the spring migrations. Arrives the first of May (8, 1873; 4, 1874; April 30, 1875; May 3, 1876; April 30, 1877; 26, 1878; 26, 1879), and remains till October (14th, 1876).

The Black and White Creepers are interesting little birds, that spend the greater part of their time in creeping upon the trunks and branches of trees, somewhat after the fashion of the Brown Creeper. When first arrived, in spring, they sing a feeble refrain; but, a little later, when the full tide of migration has set in from the South, the Creepers may be seen perched upon the highest tree-tops, singing a very sweet little ditty, almost exactly like the song of the Redstart (*Setophaga ruticilla*). After this matin performance they drop down upon the tree-trunks, and creep about them in spirals in search of insects, uttering a low, inward note; hopping out to the extremity of a branch, they will amuse themselves with flying out in short curves after insects. They sometimes inhabit swampy thickets, doubtless attracted thither by the abundance of insects; their presence there may be detected by the utterance of certain harsh, screeching notes that are peculiar to itself.

Their nest is placed upon the ground; generally sheltered by a projecting rock, or stump. A pair once nestled close to my house. The nest, built upon a bed of leaves, sheltered by a jutting rock, was composed of strips of grape-vine bark, stems of plants, and grasses, loosely felted. The parents were very gentle, and seemed to apprehend from my frequent visits no greater misfortune than a temporary separation from their little ones. The young were five in number. I watched them developing until their parents taught them, first, to climb upon a neighboring grape-vine, and afterwards to attempt short flights from branch to branch; soon they were strong enough to leave their natal spot, and rambled through the woods together,—a happy, rollicking, unbroken little family.

Dimensions.—Average measurements of sixteen specimens: length, 5·30; stretch, 8·54; wing, 2·73; tail, 2·02; bill from nostril, ·37; gape, ·60; tarsus, ·67; middle toe, ·50; its claw, ·18.

21. Parula americana, (Linné). BLUE YELLOW-BACKED WARBLER. Exceedingly numerous during migrations; a few breed. I have never discovered its nest, but am indebted to Mr. W. C. Osborn for a very young bird, shot near his residence, on the opposite bank of the Hudson, in Putnam county, where its nest was previously discovered, as recorded by DeKay in the Zoology of New York, Part II, p. 97. Giraud also observes:³ "I am informed that its nest has been found at the Catskill Mountains."

It arrives early in May (12, 1874; 12, 1875; 5, 1876; 11, 1877; April 27, 1878; May 8, 1879), remaining till October (8, 1874; 8, 1876). I have heard quite a varied and pleasing song from this little bird; but succeeded by a rapid succession of harsh, flinging notes.

Dimensions.—Average measurements of seventeen specimens: length, 4·73; stretch, 7·54; wing, 2·40; tail, 1·76; bill from nostril, ·32; gape, ·54; tarsus, ·68; middle toe, ·40; its claw, ·16.

22. Helmitherus vermicivorus, (Gmelin). WORM-EATING WARBLER. A rather common summer resident; breeds. Arrives about the middle of May (15, 1875; 9, 1876; 11, 1878; 8, 1879), and remains through the summer.

There is a singularity about every attitude and movement of this bird, that at once attracts attention. Chiefly seen upon the ground, scratching amongst the leaves, and uttering a sharp chirp at intervals, it suddenly surprises you by flying high up among the branches in pursuit of a moth; then it alights upon a branch, and makes quite a successful attempt at a song; later, you may see it climbing upon the body of a tree, apparently as much at home as a Nuthatch would be; it even pauses occasionally to utter a few feeble notes of a song. It is sometimes found in the open woods, on its first arrival from the South; but later, when it has settled to its summer quarters, it is seldom seen outside of its favorite swampy thickets, where it breeds and passes the summer. Wet places, grown up to huckleberries,—just such spots as delight the Woodcock—are its usual resorts. Its note is sharp and metallic; and the bird is shy and difficult to capture.

Dimensions.—Average measurements of ten specimens: length, 5·51; stretch, 8·75; wing, 2·78; tail, 2·05; bill from nostril, ·39; gape, ·64; tarsus, ·70; middle toe, ·50; its claw, ·18.

23. Helminthophaga pinus, (Linne). BLUE-WINGED YELLOW WARBLER. A summer resident; breeds. I found a nest, built in a tussock of grass, on Constitution Island, in the Hudson River. I saw another set of eggs, taken in a similar situation and said to be those of a "yellow bird," which agree very well with the eggs in my collection; but they may be those of the Nashville Warbler (*H. ruficapilla*).

³ Birds of Long Island, p. 60, 1844.

It arrives about the middle of May (12, 1875; 17, 1877), and spends the summer. John Burroughs mentions⁴ the occurrence of this species at Highland Falls, and Giraud observes:⁵ "the present species has been shot during summer on the Catskill Mountains, and it is not improbable that it breeds there; it has been shot in Rockland County, and other parts of the State of New York, but seems to be nowhere abundant." At Riverdale, on the Hudson, Mr. E. P. Bicknell says⁶ it is "common during the summer, and regularly breeding." Dr. A. K. Fisher has taken its eggs at Sing Sing, N. Y. It thus appears that the species is a summer resident along the Hudson, as far as Catskill.

Dimensions.—Measurements of male: length, 4·85; stretch, 7·30; wing, 2·46; tail, 1·90; bill from nostril, ·35; tarsus, ·66. Female: length, 4·80; stretch, 7·24; wing, 2·25; tail, 1·77; bill from nostril, ·35; gape, ·55; tarsus, ·68; middle toe, ·38; its claw, ·15.

24. *Helminthophaga chrysoptera*, (Linné). BLUE GOLDEN-WINGED WARBLER. A summer resident. Arrives from the South early in May (12, 1875; 10, 1878; 15, 1879). This species is a regular spring migrant; and doubtless passes considerably farther to the northward. The insect-like notes of this bird, once heard, are not apt to be forgotten; both it, and the preceding, are usually found in swampy thickets.

Dimensions.—Average measurements of five specimens: length, 5·10; stretch, 8·05; wing, 2·46; tail, 1·94; bill from nostril, ·34; gape, ·57; tarsus, ·70; middle toe, ·42; its claw, ·16.

25. *Helminthophaga ruficapilla*, (Wilson). NASHVILLE WARBLER. A very common spring and fall migrant, and rare summer resident. Arrives early in May (11, 1874; 11, 1875; 6, 1876; 13, 1877; 10, 1878; 8, 1879), departing late in September (21, 1874; 20, 1875; 16, 1876). In spring it is very abundant in fruit orchards, flitting among the blossoms; but in autumn, when it is abundant from the first to the twentieth of September, it is usually seen skipping about in the tree tops; in summer it retreats to swampy wildernesses, there to breed. I have not discovered its nest; but Dr. Clinton L. Bagg has taken its eggs at Poughkeepsie, on the Hudson.

Dimensions.—Average measurements of sixteen specimens: length, 4·77; stretch, 7·45; wing, 2·33; tail, 1·81; bill from nostril, ·28; gape, ·48; tarsus, ·67.

26. *Helminthophaga celata*, (Say). ORANGE-CROWNED WARBLER. A rare migrant. "On May 13, 1875, I shot a beautiful male of this rare species, as it was skipping among the apple blossoms, close

⁴ Wake-Robin, p. 22, 1871.

⁵ Birds of Long Island, p. 67, 1844.

⁶ Bull. Nutt. Orn. Club, Vol. III, p. 130, 1878.

to my house, in company with a little band of Warblers which may have belonged to the same species."⁷ Mr. E. P. Bicknell observes:⁸ "A female was taken [at Riverdale, on the Hudson] on October 9, 1876, and a second specimen seen on the 29th of the same month. The former bird was shot while gleaning among the withering blossoms of a patch of golden-rods (*Solidago*), while the latter was hopping about in a clump of leafless briars and shrubbery quite unsuspicuously, allowing an approach of a few feet."

Dimensions.—Measurements of No. 667 ♂, Highland Falls, N. Y., May 13, 1875, E. A. M.: length, 4·69; stretch, 7·25; wing, 2·22; tail, 1·85; bill from nostril, ·30; tarsus, ·69.

27. *Helminthophaga peregrina*, (Wilson). TENNESSEE WARBLER. A rather rare migrant; sometimes abundant in autumn. In spring a few are seen, generally in company with *H. ruficapilla*, disporting themselves among the fruit blossoms. In autumn they are sometimes found abundantly, along the river banks, in the willow trees. I found large flocks in the willow swamps, on Iona Island, and on Consook Island, in September, 1876.

Dimensions.—Average measurements of four specimens: length, 5·00; stretch, 7·68; wing, 2·63; tail, 1·69; bill from nostril, ·32; tarsus, ·65.

28. *Dendroeca aestiva*, (Boddart). YELLOW WARBLER; SUMMER YELLOWBIRD. A summer resident; not very abundant; breeds. Arrives early in May (12, 1875; 12, 1876; 17, 1877; 9, 1878), and remains till autumn (September 3, 1874).

Dimensions.—Average measurements of seven specimens: length, 5·10; stretch, 7·78; wing, 2·40; tail, 1·89; bill from nostril, ·33; tarsus, ·74.

29. *Dendroeca virens*, (Gmelin). BLACK-THROATED GREEN WARBLER. A summer resident; very abundant during its migrations; a few remain and breed. Arrives early in May (16, 1874; 11, 1875; 1, 1876; 12, 1877; 9, 1878; 7, 1879), and departs late in October (21, 1874; 28, 1876). It is found everywhere, in all kinds of woods; but it is especially numerous in hemlocks growing among deciduous trees. It is seen, in large companies, clinging to the tips of the branches, exhibiting a fluttering of wings and incessant activity. Its attitudes and notes remind one of the Titmice; but it possesses a very pleasant song, besides. Not rare in summer.

Dimensions.—Average measurements of twenty-six specimens: length, 5·10; stretch, 7·72; wing, 2·46; tail, 1·99; bill from nostril, ·25; gape, ·55; tarsus, 68; middle toe, ·40; its claw, ·16.

⁷ Bull. Nutt. Orn. Club, Vol. III, p. 46, 1878.

⁸ Bull. Nutt. Orn. Club, Vol. IV, p. 61, 1879.

30. *Dendrœca cœrulescens*, (Linne). BLACK-THROATED BLUE WARBLER. An exceedingly common spring and fall migrant; not seen in summer. Arrives early in May, and remains till late in the month (May 7 to 22, 1875; 9 to 23, 1876; 12 to 18, 1877; 4 to 18, 1878; 7, 1879); in autumn it appears early in September (11, 1876; 24, 1877; 23, 1878), and departs in October (5, 1874; 17, 1876). The males arrive from the South before the females. The latter do not make their appearance in considerable numbers for several days after. This beautiful species possesses the flycatching habits of the Blackburnian Warbler (*D. blackburniæ*), flying in short curves after insects, often alighting upon the sides of trees, and equally at home upon the ground or in the highest tree-top.

On the 15th of October, 1876, we were visited by a heavy fall of snow, which, at that early season, must have been as unwelcome to the birds as it was unexpected by ourselves. The apple trees, loaded with their beautiful fruit and dark green leaves, were bent low down under a weight of snow, while the foliage on the mountains, still glowing in all the beautiful tints of autumn, blended its gorgeous hues with the burdening snow flakes. Several of our summer Warblers were still present; and, among them, this species and the Black-throated Green; both of these came close about the house, and endeavored to enter at the windows: a common habit with the Yellow-rump (*D. coronata*).

Dimensions.—Average measurements of twenty-eight specimens: length, 5·28; stretch, 7·96; wing, 2·52; tail, 2·06; bill from nostril, ·29; gape, ·55; tarsus, ·74; middle toe, ·45; its claw, ·17.

[TO BE CONTINUED.]

A LIST
OF THE
BIRDS OF HUDSON HIGHLANDS
WITH ANNOTATIONS.

PART III.

BY EDGAR A. MEARNs.

[From the BULLETIN OF THE ESSEX INSTITUTE, Vol. XI, page 154.]

A List of the Birds of the Hudson Highlands, with Annotations.

BY EDGAR A. MEARNS.

[Continued from page 52]

31. *Dendroeca cœrulea*, (Wilson). CŒRULEAN WARBLER. A rare migrant. "I secured a fine male of this beautiful species, near my residence, May 17, 1875."¹ Mr. H. G. Fowler records² a female taken in central New York, May 27, 1876.³

32. *Dendroeca coronata*, (Linné). YELLOW-RUMPED WARBLER. An excessively abundant spring and fall migrant, and occasional winter resident. Arrives near the middle of April (17, 1876), remaining till late in May (28, 1874; 23, 1875; 23, 1876; 20, 1877); in autumn it arrives late in September (28, 1875; 23, 1876), remaining till the first of December, or later, according to the severity of the weather. Throughout the winter of 1877-78 it remained in considerable numbers in the Highlands. It seemed quite contented so long as the ground was bare; but after a snow-storm flew restlessly about, seeking with great avidity any bare spot of ground. It was often observed flying about in orchards; but inhabited chiefly bushy places, and cedar groves near the Hudson. Its food consisted mainly of cedar berries. Its spring moult takes place about the first of April.

I give the following extract from my journal:

"April 25, 1878. While hunting in the rain, the clouds suddenly shone out bright—a purely April phenomenon—and then the birds began to sing. Even the Yellow-rumps produced a very pleasant warble, which, taken up by one after another of the flock by which I was surrounded, produced a very pleasing medley of music."

Dimensions. — Average measurements of twenty-four specimens:

¹ Bull. N. Y. Orn. Club, Vol. III, p. 46, 1878.

² Complete List Birds Cayuga, Seneca, and Wayne counties, Daily Advertiser, Auburn, N. Y., Aug. 14, 1877.

³ As this article is going through the press, I have received, through the kindness of Mr. S. F. Rathburn, his "Revised List of Birds of Central New York," where I find, in addition, the following: "Not an uncommon summer resident. Observed rarely previous to 1876. Arrives about the second week in May. Taken by Mr. E. R. Richardson, Jr., of Auburn, N. Y., May 8th, 1878. Departs in September."

length, 5·65; stretch, 9·01; wing, 2·85; tail, 2·25; bill from nostril, ·29; gape, ·51; tarsus, ·71.

33. *Dendroeca blackburniae*, (Gmelin). BLACKBURNIAN WARBLER. Very common during migrations; not seen in summer. Arrives from the South before the middle of May (10, 1875; 9, 1876; 15, 1877; 7, 1878; 14, 1879), and, like the Bay-breasted and Black-poll (*D. D. castanea* and *striata*), passes rapidly through before the first of June; seen as late as May 28 (1876). In autumn it appears in September (20, 1875), and passes southward before the middle of October. It favors us, in the spring, with a very sweet song; is found in all kinds of woods, but, like *D. virens*, is partial to the hemlocks. It is seen actively searching for insects among the branches, sometimes following them to the ground, where it often spends considerable time. It is gentle and unsuspicious; when it flies towards the observer, thus exposing the glowing orange-red color of its breast, it resembles a moving ball of fire.

Dimensions.—Average measurements of thirty-one specimens: length, 5·25; stretch, 8·12; wing, 2·71; tail, 1·96; bill from nostril, ·31; gape, ·55; tarsus, ·72; middle toe, ·39; its claw, ·17.

34. *Dendroeca striata*, (Forster). BLACK-POLL WARBLER. Common during spring and fall migrations. Arrives about the middle of May (20, 1874; 23, 1876; 19, 1877; 9, 1878; 14, 1879), remaining till about the first of June (May 29, 1874; 28, 1876; 28, 1877); in the fall it reaches us early in September (10, 1874; 9, 1876), remaining till late in October (16, 1874; 14, 1876).

Dimensions.—Average measurements of eighteen specimens: length, 5·56; stretch, 8·90; wing, 2·92; tail, 2·05; bill from nostril, ·30; gape, ·55; tarsus, ·75; middle toe, ·45; its claw, ·17.

35. *Dendroeca castanea*, (Wilson). BAY-BREASTED WARBLER. A regular and abundant spring and fall migrant. It passes rapidly through, between the middle and last of May (19 to 29, 1874; 16 to 28, 1876; 18 to 26, 1877; 22, 1878; 14, 1879); returning in autumn it passes us during the last half of September and the first days of October (September 19, 1875; October 3, 1876). The autumnal plumaged birds are generally indistinguishable from the preceding (*D. striata*), when seen in the tree-tops; but I have never seen any specimens that were doubtful upon careful examination. The darker legs of this species may, I think, be taken as diagnostic, and they are otherwise distinguished by the colors of the throat, sides of the breast, and under tail-coverts. Its habits are very similar to those of the Black-poll. It is usually seen in the tree-tops, where its movements are rather heavy, and slow. It seems to be especially fond of bathing in the brooks. Both sexes possess a very sprightly song.

Dimensions.—Average measurements of twenty-four specimens:

length, 5·63; stretch, 8·94; wing, 2·95; tail, 2·12; bill from nostril, ·30; tarsus, ·72.

36. *Dendroeca pennsylvanica*, (Linné). CHESTNUT-SIDED WARBLER. A summer resident; breeds abundantly. Arrives early in May (11, 1874; 12, 1875; 9, 1876; 15, 1877; 3, 1878; 7, 1879), and departs late in September (30, 1876).

The Chestnut-sided Warbler is the only species of its genus that breeds abundantly with us. Its nest is placed in the fork of a low bush; and its eggs, four in number, are deposited about the last of May, or early in June. I have found the female sitting as early as May 26th (1877). It possesses a song of considerable power and sweetness; utters a sharp *tsip* while gleaning among the branches. The young birds follow the parents, and usually frequent damp thickets. They are quite gentle, coming close up to the observer, and uttering a low squealing note, as if demanding food. The parent sits very closely upon its nest; if disturbed, it refuses to remove farther than a few feet, there remaining quite silent, except a soft, pleading note, occasionally repeated.

Dimensions.—Average measurements of sixteen specimens: length, 5·14; stretch, 7·80; wing, 2·45; tail, 2·00; bill from nostril, ·29; gape, ·52; tarsus, ·72; middle toe, ·38; its claw, ·17.

37. *Dendroeca maculosa*, (Gmelin). BLACK-AND-YELLOW WARBLER. A common spring and fall migrant. Arrives the second week in May (15, 1874; 11, 1875; 16, 1876; 14, 1877; 8, 1878; 8, 1879), remaining till late in the month (May 22, 1875; 28, 1876; 25, 1878); in autumn it arrives in September (11, 1876; 6, 1879), and departs in October (5, 1876). This beautiful species is partial to the hemlock-trees, where it feeds in company with the Black-throated Green Warbler; but it is found in all kinds of woods. It frequently descends to the ground; sometimes inhabits low bushes.

Dimensions.—Average measurements of nineteen specimens: length, 5·12; stretch, 7·67; wing, 2·30; tail, 2·00; bill from nostril, ·30; gape, ·53; tarsus, ·74; middle toe, ·38; its claw, ·17.

38. *Dendroeca tigrina*, (Gmelin). CAPE MAY WARBLER. A rather rare migrant. Mr. Wm. K. Lente took a male, at Cold Spring, on the Hudson, May 20, 1875. Mr. Wm. C. Osborn took a female, at Garrisons, on the Hudson, May 15, 1876. Mr. Chas. Simpson found it abundant at Peekskill, during the spring of 1877, when he procured a number of adult specimens. In this locality, the Cape May Warbler is seldom seen in spring. A fine male was shot, by Mr. Wm. C. Osborn, near his residence, on the opposite side of the Hudson, on May 14, 1878; but in autumn it is generally seen in September, on its way to the South. I have observed it from September 8th (1876) to the 20th (1875). It is seen in the tree-tops, where its movements appeared

to me to be very slow and deliberate; and it is generally mute, though on one occasion my attention was attracted to a bird that produced a remarkable jingling noise in a cedar-tree, and proved, on being shot, to be a young male of the present species.

Dimensions.—Measurements of No. 1,275 ♂, Consook Island, Hudson River, September 8, 1876: length, 5·20; stretch, 8·31; wing, 2·69; tail, 2·00; bill from nostril, ·30; tarsus, ·75.

39. *Dendrœca discolor*, (Vieillot). PRAIRIE WARBLER. A rare summer resident; breeds. I found a nest of this small Warbler, on June 23, 1877. One day, returning from a long tramp, I discovered the nest as I neared home, but not until after I had shot both of the parents; then, too late, I regretted the act, for I was shown their beautiful nest, placed on the low limb of an apple tree beside a cow stable, close to the road-side. The young were full-fledged, and flew away when the nest was approached. The person who showed me the nest seemed grieved at the death of the old birds; remarking that his family had been greatly entertained by the sprightly manners and sweet song of the little birds, which had delighted them since the commencement of summer; and he left the place with a kind wish that the young orphans might thrive, which he afterwards told me he believed was the case. I brought the nest away, together with the old birds; the first and only ones I have ever seen. The nest was an elegant and somewhat bulky structure; felted of cows' hair, strips of bark, and feathers.

Dimensions.—Measurements of No. 1,479 ♂, June 23, 1877, Highland Falls, N. Y.: length, 4·88; stretch, 7·15; wing, 2·19; tail, 1·95; bill from nostril, ·28; gape, ·50; tarsus, ·67; middle toe, ·38; its claw, ·15.

40. *Dendrœca palmarum*, (Gmelin). YELLOW RED POLL WARBLER. A common spring and autumn migrant. Arrives about the middle of April, remaining till the second week in May (April 14 to 25, 1874; 30 to May 8, 1875; 14 to May 8, 1876; 16 to May 5, 1877; 20 to April 27, 1878; 11, 1879). In autumn I have found it from September 20 (1879) to October 24 (1876). It arrives, in company with *D. pinus*, long before the other Warblers, excepting only *D. coronata*. Both species are eminently terrestrial in their habits, and are first seen hopping upon lawns and grassy banks, accompanying the various sorts of Sparrows; later, they are found inhabiting damp, bushy places, beside ponds and streams. The Red-poll's tail executes a perpetual lateral vibratory movement, which is as characteristic as is the tilting motion of the *Siuri*; this motion is often accompanied by a feeble *chip*, the only note I have heard it utter.

Dimensions.—Average measurements of nineteen specimens: length, 5·43; stretch, 8·38; wing, 2·61; tail, 2·10; bill from nostril, ·31; gape, ·56; tarsus, ·77; middle toe and claw, ·67.

41. Dendroeca pinus, (Wilson). PINE-CREEPING WARBLER. A rather rare migrant; not seen during the breeding season. Arrives about the middle of April (May 3, 1875; April 11, 1876; 16, 1877; 15, 1878). Usually appears upon the lawns about the middle of April, associating with *D. palmarum*, and seems, in its habits, quite as terrestrial. It is then (according to my observations) quite mute; does not vibrate its tail like the Yellow Red-poll; but, like that species, its movements are very graceful. Later in the spring it appears in the woods, among the branches, where its movements are slow and deliberate; but, on one occasion, I saw a male darting with considerable celerity, in the top of a birch-tree. I have only seen it in summer on a single occasion, late in August.

Dimensions.—Average measurements of four specimens: length, 5·52; stretch, 8·91; wing, 2·81; tail, 2·25; bill from nostril, .33; tarsus, .70.

42. Siurus auricapillus, (Linné). GOLDEN-CROWNED ACCENTOR; OVEN BIRD. A common summer resident; breeds abundantly. Arrives early in May (8, 1874; 10, 1875; 5, 1876; 7, 1877; April 26, 1878; May 3, 1879), remaining till October (16, 1874; 16, 1876). Its eggs are laid the last of May or early in June. I found a nest containing five eggs on May 30, 1877. Its habit of building a covered nest, and of hovering high above the trees, just before night-fall, and pouring out its delightful song as it descends through the air, serve to attract more general attention and recognition than most of our shy and solitary species do. During the day it utters a loud chant; always monotonous, and sometimes positively disagreeable to the weary listener.

Dimensions.—Average measurements of fourteen specimens: length, 6·17; stretch, 9·63; wing, 3·00; tail, 2·15; bill from nostril, .35; gape, .61; tarsus, .91.

43. Siurus nævius, (Boddaert). AQUATIC ACCENTOR; WATER WAGTAIL. A somewhat common spring and fall migrant. Arrives later than *S. motacilla* (May 5, 1876; 15, 1877; April 26, 1878), remaining till about the first of June (May 29, 1877; 24, 1878). Seen in autumn from August 31st to September 16th (1876). The present species ranges much farther to the North than *S. motacilla*, and rarely, if ever, breeds in this latitude. Still there may be exceptional cases, as there are collectors lower down the Hudson, who assert that they have discovered its nest. Indeed Dr. Coues states⁴ that he has himself found it, at Washington, D. C., spending the summer, "under circumstances that leave no doubt of its breeding."

The "Small-billed Water Thrush," as this species is familiarly known, is found skulking among the weeds and débris, found on the

⁴ *Bds. Colo. Val.*, Vol. I, p. 304, 1878.

muddy margins of ponds, ditches, and the river, while the Large-billed Accentor (*S. motacilla*) is seldom seen in such situations, but evinces a decided preference for clear mountain streams, with pebbly bottoms; neither is it ordinarily seen skulking under cover. The note of the Aquatic Accentor is a metallic *chick*, resembling the common note of the larger species; but it is rather disposed to silence during its brief stay with us. I have never heard its song, which is said to be remarkably fine. This species shares the habit of tilting its body as it moves about, practiced by the two other species of its genus.

Dimensions.—Average measurements of eight specimens: length, 6·04; stretch, 9·52; wing, 2·99; tail, 2·11; bill from nostril, ·40; gape, ·67; tarsus, ·84; middle toe, ·55; its claw, ·14.

44. Siurus motacilla, (Vieillot). LARGE-BILLED ACCENTOR. A common summer resident; breeds. Arrives in April (15, 1874; 30, 1875; 20, 1876; 23, 1877; 19, 1878; 26, 1879); departs early in autumn.

The Large-billed Water Thrush is a charmingly interesting friend of the out-of-doors-naturalist. It is very abundant with us from the time of its arrival, early in April, until late in summer. It sometimes appears here before the winter's snows are past, but even under such conditions it seems to be quite contented, and is in full song. Its song is quite unique; being loud, clear, and unsurpassingly sweet. Frequenting, as it does, the darkly shaded forest streams, that abound in water-falls and cascades, rushing over broken masses of rock, and mossy fallen logs that collect and detain the *débris*; seen in such cool and delightful situations, its song becomes associated in one's mind with its surroundings and accessories. Indeed, its notes cannot be dissociated from the sound of gurgling, rushing waters, and those sights and sensations which impress one so agreeably when in the woods. Even a casual allusion to this little bird recalls, to the mind of the collector, a bright picture of clear mountain streams, with their falls and eddies, their dams of rocks and fallen tree-trunks, their level stretches flowing over bright, pebbly bottoms, with mossy banks and rocky ferneries, and their darting minnows and dace; for only in such wild localities is the Water Wagtail at home. There you will see it sitting upon the stones, close beside the foaming water, expressing its pleasure at its surroundings by constantly repeating, in a complacent tone, its single *chick*. It runs about (never hopping) over the stones and moss, gleaning along the sandy margin of the stream. Occasionally you may see it alight upon the witch-hazel, or alder bushes, that border the water, running dexterously along their branches. It always accompanies every employment with a Sandpiper-like, tilting motion of its body. Now it starts off in pursuit of one of its fellows. They fly through the forest with astonishing velocity, uttering a sharp,

twittering note, that sounds like the noise produced by striking two pebbles rapidly together. As they emerge higher up the stream, the chase is relinquished for the time, and you are surprised as they fly past to hear the clear notes of its song uttered as distinctly in mid-air as when perched; then the chase is renewed, but as they fly back again, one of the birds rises high up in the air above its pursuer, and then flutters slowly downward, pouring out its sweet song as it descends, mingling its cadence with the sound of the brook—the whole effect in perfect harmony with the spirit of the place. These performances take place oftenest early in the morning, about sunrise. At that time its song is loudest and sweetest. The performer is usually stationed upon some lofty tree-top.

The Louisiana Water Thrush builds its nest upon the ground, usually in a bank at the side of a stream. It is placed upon a bed of leaves, and is always protected by a projecting bank, rock or root. There the eggs are deposited quite early in the season, and when, by due process of incubation, they have been metamorphosed into little birds, the first sound that greets the young ears of the nestlings is the voice of the brook, their first sight that of dancing, sparkling waters, whose murmur drowns the rustle in the tree-tops. What wonder that when, reared by its gentle parents' fostering care, it reaches maturity, it should still cling to the memories and associations so early ingrafted, never caring to wander far from the music of its native waters.

We had no reliable account of the nidification of the Large-billed Accentor until Mr. Ernest Ingwersoll gave a description of a nest with four fresh eggs, taken in June, 1873, at Franklin Station, New London County, Conn., and fully identified by the capture of the female parent.⁵ The nest "was rather loosely and carelessly constructed of fine grass and some little dead fibrous moss; but beneath, a few, and about the outside, particularly in front, many dead leaves were put, as a sort of breastwork to decrease the size of the entrance and more thoroughly conceal the sitting bird. It was underneath the edge of a perpendicular bank eight or ten feet from the water." The eggs, "lustrous white, were more or less profusely spotted all over with dots and specks, and some obscure zigzagging, of two tints of reddish-brown, with numerous faint points and touches of lilac and very pale underlying red." Dr. Coues gives ("Birds of the Northwest," p. 73, 1874) the following notice: "The Large-billed Water Thrush has been found breeding on the Wachita River, where the nest and eggs were secured by Mr. J. H. Clark, and at Kiowa Agency, where Dr. Palmer also procured them. The one of these two nests in the

⁵ See American Naturalist, Vol. VIII, p. 238.

best condition was built upon a layer of leaves, apparently upon the ground, composed otherwise entirely of rootlets and fine grasses. The other contained five eggs; they are more globular than any of those of *S. noveboracensis* I have seen, but not otherwise different; and other sets would probably not be distinguishable. The roundest one of them measures only 0·69 by 0·59."

These nests remained unique until Mr. William Brewster "had the good fortune to secure two fully identified nests of this species in Knox County, Indiana," in the spring of 1878.⁶ "The first, taken with the female parent May 6, contained six eggs, which had been incubated a few days. The locality was the edge of a lonely forest pool in the depths of a cypress swamp near White River. A large tree had fallen into the shallow water, and the earth adhering to the roots formed a nearly vertical but somewhat irregular wall about six feet in height and ten or twelve in breadth. Near the upper edge of this, in a cavity among the finer roots, was placed the nest, which, but for the situation and the peculiar character of its composition, would have been exceedingly conspicuous. The nest, which is before me, is exceedingly large and bulky, measuring externally 3·50 inches in diameter, by 8 inches in length, and 3·50 inches in depth. Its outer wall, a solid mass of soggy dead leaves plastered tightly together by the mud adhering to their surfaces, rises in the form of a rounded parapet, the outer edge of which was nicely graduated to conform to the edge of the earthy bank in which it was placed. In one corner of this mass, and well back, is the nest proper, a neatly rounded, cup-shaped hollow, measuring 2·50 inches in diameter by 2·50 inches in depth. This inner nest is composed of small twigs and green mosses, with a lining of dry grasses and a few hairs of squirrels or other mammals arranged circularly. The eggs found in this nest are of a rounded-oval shape and possess a high polish. Their ground-color is white with a fleshy tint. About the greater ends are numerous large but exceedingly regular blotches of dark umber with fainter sub-markings of pale lavender, while over the remainder of their surface are thickly sprinkled dottings of reddish-brown. But slight variation of marking occurs, and that mainly with regard to the relative size of the blotches upon the greater ends. They measure, respectively, .75 X .63, .78 X .64, .75 X .63, .76 X .62, .76 X .62, .75 X .61."

Mr. Brewster then gives a pleasant description of the second nest, taken May 8, on the opposite side of the same pond, in a precisely similar situation, where his previous experience enabled him to find it directly. In shape it was nearly square, "measuring externally

⁶ See Bulletin of the Nuttall Ornithological Club, Vol. III, No. 3, pp. 133 to 135, July, 1878.

6.50 inches in diameter by 3.54 inches in depth. The inner nest measures 2.73 inches in diameter by 2.50 inches in depth, and is lined with dry grasses, leaf-stems, and a few white hairs. The eggs were four in number and perfectly fresh. They agree closely in shape with those of the first set, and have an equally high polish, but are somewhat more heavily and handsomely marked. The color is creamy-white with heavy blotches of umber-brown generally distributed, but occurring most thickly at the greater ends; fine dottings of lighter brown, and a few spots of pale lavender, fill in the intermediate spaces. They measure, respectively, .71 X .60, .71 X .60, .72 X .60, .72 X .61. In each of these two sets the eggs show unusually little variation *inter se.*" On May 12. a third nest was found by Mr. Robert Ridgway, on the shore of an isolated little woodland pond, which contained five young birds, well feathered and nearly able to fly. The site, in this instance, was at the foot of a huge stump, the nest being placed in a cavity in the rotten wood. Still another nest was found by Mr. Brewster, April 29, under the bank of White River, among the earth and roots, and well sheltered by the projection of the bank above. The female was sitting upon the empty nest, and was shot as she flew from it.

In "The Oölogist" (Vol. IV, No. 2, pp. 10, 11, April, 1878), Mr. Adolphe B. Covert describes its nest and eggs as follows: "On the 7th of June I found the nest to contain five eggs, and shot the parent bird, which proved to be the Large-billed species. The nest was built on the ground, at the base of a large black ash, partially under and against a large root, which formed an arch over half of the nest. It was composed of a layer of dead leaves, moss, fine roots, and dried grasses, compactly and rather smoothly finished, and lined with fine grass and some cows' hair. The eggs were five in number, white (of a roseate tinge before blown), thickly spotted with small reddish-brown spots; they measure about .78 by .59 inch." I am unable so much as to guess where this nest was discovered, since the author neglects to give any locality.

As the above comprises all that is at present known concerning the nidification of this bird,⁷ it will not seem out of place to give, in this connection, the results of my own observations on the nestling of this Accentor at Highland Falls, where, as stated at the commencement, it is a common summer resident. I remember quite well the first nest that I discovered—a number of years ago. As I was returning home through the woods one evening, I stopped to drink, hunter fashion, from a cold spring that bursts from the side of a ravine, close

⁷ Besides the above, I am informed that a notice of its breeding appeared in Forest and Stream, sometime during the past year.

to a large brook. I was about to drink, when a bird flew right in my face, startling me greatly; but soon I heard the accustomed *chick*, uttered in a loud, complaining tone, and then I saw the bird tilting up and down upon a stone in the middle of the brook. The nest was placed at the side of the spring just above the water, occupying the cavity whence a round stone had been dislodged. It contained four eggs; having embryos considerably advanced. The nest was loosely constructed of strips of bark, grasses, stems of plants, and leaves. A nest was also found in this same spot on a succeeding season, from which five fresh eggs were taken. The eggs of the first set are before me, and are as described by Mr. Brewster, except that the markings are aggregated at the larger ends; the darkest arranged in a circle near that extremity. This nest was found May 31. In 1877, I found as many as six young Water Thrushes in a nest that was built in a pile of *débris* that was lodged in some bushes that grew on a little island in the midst of a large stream. This nest was very artfully concealed, and I had searched for it unsuccessfully ever since the middle of May. The parents always seemed greatly distressed whenever I approached the nest, and always tried to lead me away from it. I should not have discovered it had not the young ones betrayed its presence by their chirping. They left the nest about June 10. On May 7, 1878, I shot a female containing an egg of full size in her oviduct. On the 15th, after a long search and several previous failures, I found a newly finished nest. So carefully was it concealed, that I looked directly into it before making its discovery. By the 21st five eggs were laid, but neither of the parents would approach it. On the 22nd six eggs had been deposited, and I nearly succeeded in capturing the sitting bird; but it slipped away just as I was going to put my hand over it, and ran down the bed of the brook to the large stream, where it remained silent till nearly approached, when it flew into a tree opposite, where it bowed and chipped in a low tone till shot. The nest was placed under the bank of a smaller stream, tributary to a large brook. Its position was such, that only accident, or the most careful search, could discover it. The projecting branches of a laurel-bush still further aided its concealment. The nest presents the following dimensions: internal diameter, 2·95 inches; internal depth, 1·25 inches. The six eggs measure, respectively, ·75 × ·62; ·79 × ·65; ·77 × ·64; ·75 × ·63; ·75 × 63; ·74 × 62. This nest and the others resemble so closely, in composition, those already described by Mr. Brewster, that a detailed description is unnecessary; their form and materials differ slightly, according to situation. On May 23, 1878, I took five slightly incubated eggs from a nest that was placed under some brush and roots, in the bank of a small stream that flows into the Buttermilk Falls brook. One of these eggs is in

the hands of Mr. Ernest Ingersoll for illustration of his work on the "Nests and Eggs of American Birds," his original set having been placed where it was not available for the purpose. The remaining four measure, respectively, $.79 \times .65$; $.80 \times .65$; $.80 \times .64$; $.80 \times .65$. The nest presents an internal diameter of 2·70 inches; internal depth, 1·40 inches. In this set the eggs are as described by Mr. Brewster, but the markings form a distinct circle about the larger end. In the preceding set the markings are more uniformly distributed, but are most distinct at the great end. May 27, 1879, another nest was found, which contained five young birds nearly full-fledged. Visiting it a few days later, I found the old birds present, but the young had left the nest, but, though not seen, were still in the neighborhood, as was plainly indicated by the actions of the parents, which manifested the utmost concern at my presence; fluttering, and dragging themselves over the leaves with wings extended in a seemingly helpless fashion, they endeavored to lead me away from the spot. This nest was built far under the jutting margin of the stream; also tributary to a larger one. It was only discovered by my having actually placed my hand upon the young birds while exploring in search of the nest.

Of the six nests above enumerated, three were found under the projecting margins of small brooks, near their anastomoses with larger streams, two at the side of a spring close to a large brook, and one on an island in the middle of a large stream. It would seem, from the circumstance that the Water Thrush usually builds *away* from the large stream, that its sagacity leads it to select for its nesting site a position less liable to endanger the lives of its progeny by subsequent accidents of storm and flood. The Accentor sometimes builds very early. I am confident that the eggs taken by myself do not represent the earliest period of its nestling, since I have shot specimens containing full-sized ova in their oviducts as early as May 1st.

Dimensions.—Average measurements of twenty-two specimens: length, 6·28; stretch, 10·45; wing, 3·23; tail, 2·14; bill from nostril, ·39; gape, ·70; tarsus, ·91; middle toe, ·58; its claw, ·17.

45. Geothlypis trichas, (Linné). MARYLAND YELLOW-THROAT. A common summer resident; breeds. Arrives early in May (11, 1874; 10, 1875; 8, 1876; 8, 1877; 4, 1878; 8, 1879), and remains till the middle of October.

The Yellow-throat deposits its eggs late in May. I found two nests, each containing four eggs, as early as May 24, 1878. The nest is generally placed among thick bushes—frequently in a small cedar —, or suspended in a tussock of rank grass; in form it is deep, and purse-shaped. One found in a wet meadow, was built over a little stream, or watercourse, being suspended to the interlaced grasses

which were brought from either side of the ditch and fastened together. Could this artifice have been resorted to as a means of protection against the attacks of predatory animals? The nest was deep, and more compactly felted than is common. Its nest is very commonly suspended to the rushes of the marshes that border the Hudson.

The Maryland Yellow-throat delights to inhabit wet meadows and swampy thickets, in which it moves restlessly about, uttering a sharp *chick*, and numerous chattering notes. In spring, after the pairing season, the various mated couples ramble through the thickets and rank grass, constantly reminding their partners of their whereabouts by a sharp, clicking call-note. Its song is loud and sweet. You may often see it upon a rail-fence singing, in very much the same attitude as that assumed by the Song Sparrow (*Melospiza melodia*); at other times it chooses for a rostrum the highest tree-top. Just before night-fall it may be seen flying up in the air, singing as it goes, writhing its body as does the Yellow-breasted Chat (*Icteria virens*); then it suddenly drops to the ground.

Dimensions.—Average measurements of eighteen specimens: length, 5·33; stretch, 7·20; wing, 2·17; tail, 2·05; bill from nostril, ·31; gape, ·58; tarsus, ·80; middle toe, ·50; its claw, ·20.

46. Geothlypis philadelphica, (Wilson). MOURNING GROUND WARBLER. A rare migrant. Arrives about the middle of May (13, 1878), departing before June (May 26, 1876). Prof. James M. De Garmo showed me a specimen taken at Rhinebeck on the Hudson. It has also been taken by the collectors lower down the river, and Mr. George N. Lawrence includes it in his list of the birds of the vicinity of New York.⁸ Mr. George Welch met with these birds in the Adirondacks, in Junc, 1870, where they seemed rather abundant, and were evidently breeding. Mr. John Burroughs found its nest at the head-waters of the Delaware River, at Roxbury, Delaware County, N. Y.; has frequently observed this Warbler in that section. "About the head of the Neversink and Esopus, in the northern part of Ulster County, New York, they are the prevailing Warbler, and their song may be heard all day long." Dr. C. Hart Merriam some years since described its nestling, as observed at Locust Grove, Lewis County, N. Y., in the "American Naturalist"; he further adds:⁹ "Large numbers of them breed regularly, in suitable localities, in Lewis and Herkimer Counties, in northern New York."

Dimensions.—Measurements of No. 1,000, ♂ ad., May 26, 1876, Highland Falls, N. Y., E. A. M.: length, 5·63; stretch, 8·13; wing, 2·56; tail,

⁸ Ann. Lyc. Nat. Hist., Vol. VIII, p. 283, April, 1866.

⁹ Trans. Conn. Acad., Vol. VI, p. 23, 1877.

2·13; culmen, ·39; bill from nostril, ·32; gape, ·57; tarsus, ·78; middle toe, ·53; its claw, ·18.

47. Icteria virens, (Linné.) YELLOW-BREASTED CHAT. A common summer resident, breeding plentifully. Arrives before the middle of May (24, 1873; 12, 1874; 1, 1875 [Frederic S. Osborn], 9 [Mearns]; 3, 1876; 7, 1877; 7, 1878; 7, 1879), and spends the summer.

The Yellow-breasted Chat is sure to attract attention by the singularity of its habits and voice. Several pairs of Chats always nestle in some bushy fields in the neighborhood of my house, where they keep up an incessant clatter during the early part of the season. I have sometimes heard it at intervals during the night. It is quite shy, and by a judicious use of its remarkable ventriloquial powers can generally manage to keep out of harm's way. Among other equally ridiculous performances, it has the habit of flying up in the air, with its legs dangling, then allowing itself to drop nearly to the ground. Its eggs, four in number—sometimes five—are deposited about the first of June (found two nests June 1st and 3rd, 1873, each containing four eggs), in a nest built in a thicket. Mr. Peter de Nottbeck showed me specimens shot as far up the Hudson as Fishkill Landing, where he has also procured specimens of the Hooded Warbler (*Myio-dioctes mitratus*) and Worm-eating Warbler (*Helmitherus vermivorus*).

Dimensions.—Average measurements of nine specimens: length, 7·44; stretch, 9·98; wing, 3·00; tail, 3·07; bill from nostril, ·41; gape, ·78; tarsus, 1·02; middle toe, ·64; its claw, ·24.

A LIST
OF THE
BIRDS OF HUDSON HIGHLANDS
WITH ANNOTATIONS.

PART IV.

BY EDGAR A. MEARNs.

[From the BULLETIN OF THE ESSEX INSTITUTE, Vol. XI, pp. 166-8, 189-204.]

A List of the Birds of the Hudson Highlands, with Annotations.

BY EDGAR A. MEARNS.

[Continued from page 166, Vol. XI.]

48. Myiodioctes mitratus, (Gmelin). HOODED WARBLER. A very common summer resident; breeds abundantly. Arrives before the middle of May (11, 1875; 8, 1876; 15, 1877; 4, 1878; 12, 1879); remains till about the middle of September (5 and 8, 1874).

The Hooded Warbler is one of our most abundant summer Warblers. It is a very attractive species, both on account of its brilliant plumage and its delicious song. It is found in solitary woodlands, where it may be easily traced by its loud notes, which continue throughout the summer. It builds its nest in the crotch of some low bush, very often that of a laurel (*Kalmia*); it is a neat, well-felted structure, which bears some resemblance to that of the Indigo Bird (*Cyanospiza cyanea*). Its eggs (first brood) are laid about the last of May (26, 1877). Four is the usual complement, although five are occasionally deposited. Owing to its situation, the nest is not easily discovered, unless by watching the parents during its construction; nevertheless I have taken no less than three, each containing four fresh eggs, during a single walk. Its eggs are white (possessing a beautiful glow of pink before their contents are extracted), with more or less heavy spotting of red, chiefly about their larger ends. Sometimes sets are found which are nearly immaculate, while others are quite heavily marked about the greater end with purplish-red. Four sets of eggs, taken here, have an average of .71 X .53 of an inch:

extremes, .67 × .52, and .74 × .55. The common note of the Hooded Warbler is a sharp, metallic *chick*; it possesses, besides, a song of remarkable beauty.

Recent investigations are disclosing the fact that this beautiful species has a more extensive range in this State, and to the eastward, than was formerly supposed. Giraud says:¹ "With us [on Long Island], the Hooded Flycatching Warbler is not abundant. . . . It is generally met with in low situations; feeds on winged insects; and its note is loud, lively and agreeable." De Kay observes:² "This well marked but rare species in this State, was shot in Westchester county, about the middle of May." Mr. George N. Lawrence states:³ "This beautiful species is not abundant [in the vicinity of New York], but several times in the month of July I have observed it in swampy situations, on the top of the Palisades, in the vicinity of Fort Lee, where it was breeding." Mr. Eugene P. Bicknell finds it breeding commonly, at Riverdale, on the Hudson.⁴ Dr. A. K. Fisher mentions seeing a specimen at Sing Sing, on the Hudson, as late as September 19, 1878, though I think this was the only occasion on which he has found it there, although the Kentucky Warbler (*Oporornis formosus*) breeds plentifully. Mr. John Burroughs informs me that he does not find it at Esopus, on the Hudson; but Mr. Peter de Nottbeck has taken it in the Fishkill Mountains and vicinity. In his recent "Revised List of Birds of Central New York," p. 14, April, 1879, Mr. Frank R. Rathbun gives this species as "common in dense forests with a heavy undergrowth. Sixty-six specimens of this species taken during the months of July, August, and September 1878. Nest found July 25, 1878, containing three young and one egg. Northern Cayuga and North Eastern Wayne Counties, N. Y." Messrs. Rathbun and F. S. Wright further remark (Bull. Nutt. Orn. Club, Vol. IV, No. 2, p. 117, April, 1879) that they "observed this Warbler [same locality] as late as September 20, when a few cold breezes from the lake [Ontario] drove them southward." Dr. C. Hart Merriam observes:⁵ "On the 9th of September last (1878), at Lowville, an adult male of this species was killed by a cat and brought, while still warm,⁶ to Mr. Romeyn B. Hough, who now has the specimen. So far north of its known range it can hardly be considered more than a straggler." In speaking of this species in connection with several others, Mr. H. A. Purdie remarks:⁶ they "are not rare at Saybrook, Conn., but breed there

¹Bds. Long Island, p. 48, 1844.

²Zoology of New York, Part II, p. 107, 1844.

³Ann. Lyc. Nat. Hist., Vol. VIII, pp. 284, 285, April, 1866.

⁴See Bull. Nutt. Orn. Club, Vol. III, No. 3, p. 130, July, 1878.

⁵Bull. Nutt. Orn. Club, Vol. IV, No. 1, p. 7, January, 1879.

⁶Bull. Nutt. Orn. Club, Vol. I, No. 3, p. 73, September, 1876.

regularly in more or less numbers, and probably occur all along the Sound shore west of the mouth of the Connecticut River." Mr. Erwin I. Shores shot a male of this species, at Suffield, Conn., near the Massachusetts border, but in the Connecticut Valley, July 8, 1875, as recorded by Mr. Purdie, in the Nuttall Bulletin, Vol. II, No. 1, p. 21, January, 1877.

Dimensions.—Average measurements of thirty-nine specimens: length, 5·67; stretch, 8·25; wing, 2·58; tail, 2·30; bill from nostril, ·31; gape, ·58; tarsus, ·77; middle toe, ·44; its claw, ·19.

49. Myiodiotes canadensis, (Linné). CANADIAN FLYCATCHING WARBLER. Very common during its migrations. Arrives about the middle of May (16, 1876; 18, 1877; 10, 1878; 12, 1879), remaining till about June 1 (May 28, 1876; 25, 1877; 25, 1878; 27, 1879). In autumn seen as early as September 9 (1876). It is found in humid places, and has a loud, pleasant song.

Dimensions.—Average measurements of nineteen specimens: length, 5·61; stretch, 8·05; wing, 2·53; tail, 2·23; bill from nostril, ·31; gape, ·58; tarsus, ·75; middle toe, ·20; its claw, ·18.

50. Myiodiotes pusillus, (Wilson). WILSON'S GREEN BLACK-CAPPED FLYCATCHING WARBLER. A very rare migrant. Arrives about the middle of May (12, 1875; 17, 1877; 17, 1879). The few I have seen, were found in dense, tangled thickets. Its note is a sharp *chip*. Mr. Thomas W. Wilson took a fine male May 16, 1876, at Cold Spring, on the Hudson.

Dimensions.—Average measurements of two adult males: length, 5·00; stretch, 6·97; wing, 2·21; tail, 2·03; bill from nostrili, ·25; gape, ·48; tarsus, ·70; middle toe, ·44; its claw, ·18. *Female*, No. 1,916, Highland Falls, N. Y., May 17, 1879: length, 4·90; stretch, 6·75; wing, 2·10; tail, 2·00; bill from nostril, ·24; gape, ·48; tarsus, ·70; middle toe, ·44; its claw, ·18.

51. Setophaga ruticilla, (Linné). AMERICAN REDSTART. A common summer resident; breeds abundantly. Arrives early in May (8, 1873; 9, 1874; 11, 1875; 5, 1876; 9, 1877; April 27, 1878; May 3, 1879), remaining until late in September (30, 1873; October 4, 1876; September 23, 1878). Its sweet song, and the peculiar habit of spreading its tail and wings so as to expose their bright orange-red color, make the Redstart generally well known.

Dimensions.—Average measurements of sixteen specimens: length, 5·41; stretch, 7·88; wing, 2·57; tail, 2·27; bill from nostril, ·27; gape, ·51; tarsus, ·66; middle toe, ·39; its claw, ·16.

Family, TANAGRIDÆ.

52. Pyranga rubra, (Linné). SCARLET TANAGER. A common summer resident; breeds abundantly. Arrives about the second week

in May (9, 1872; 18, 1873; 9, 1874; 14, 1875; 12, 1876; 15, 1877; 3, 1878; 8, 1879), remaining till October (3, 1874; 8, 1876; 4, 1878). This gorgeously plumaged species is numerous in summer. It commences to incubate its eggs early in June; took nests containing the full complement of eggs June 4 and 6, 1877.

Dimensions.—Average measurements of forty-three specimens: length, 7·25; stretch, 11·85; wing, 3·74; tail, 2·69; bill from nostril, ·46; gape, ·76; tarsus, ·77; middle toe, ·52; its claw, ·25.

Family, HIRUNDINIDÆ.

53. Hirundo erythrogaster, Boddaert. AMERICAN BARN SWALLOW. An abundant summer resident; breeds. Arrives in April (27, 1872; 29, 1873; 25, 1874; 30, 1875; 30, 1876; 23, 1877; 23, 1878; 22, 1879), remaining until some time in September (19, 1874; 12, 1876; 6, 1879). It begins to build the last of May, and its eggs are deposited early in June.

I recently had an opportunity of observing the actions of the Swallows when congregated preparatory to taking their departure to the South, and overtaken by a severe and protracted rain-storm. The locality was a secluded pond, where no buildings afforded them protection, even at night. It was the third day of the storm, and nearly evening, when I visited the spot. The Swallows were sitting in circular lines upon some pyramidal shaped rocks out in the water, where they spent most of the time, their dripping rows making a very pitiful spectacle. At times a small band would rise with great exertion and attempt to fly to the shore, where they alighted upon the nearest object in utter exhaustion; some of them upon the stones at my very feet. I splashed a large stone into the water close to one of the rocks, when a number of frightened ones flew up, and were obliged to struggle hard to reach the shore, owing to the severe wind that prevailed. Their flight was very labored and irregular, and broken by frequent unsuccessful attempts to execute those graceful evolutions which they accomplish with such admirable dexterity and ease at other times; they flew so slowly that they might easily have been overtaken and captured. Besides the present species, there were, also, numbers of Bank Swallows (*Cotyloriparia*), which seemed even more distressed than were the Barn Swallows. It was a sad sight, to see the poor little brown and blue-backed fellows, panting upon the ground after their desperate effort, so reduced by hunger, fatigue and long-continued exposure to the storm. I wished, in vain, that I might relieve their distress; but Nature—more potent than man—came to their aid: the following day broke clear as a bell, and the sun rose warm and bright; and when I visited the pond at sunrise, the Swallows were seen busily engaged in procuring food, and appearing as happy as ever.

Giraud gives the following:⁷ "Early in the spring swallows are sometimes so benumbed as to be almost in a lifeless state. This is readily accounted for by the cold storms that set in after their arrival, which also cut off their insect food—at such times they have been found so much exhausted as to be unable to rise, and in some instances have been observed lying dead about the fields." This account brings to mind a circumstance related to me by my father: Many years ago, during a severely unseasonable storm in the spring, numbers of Swallows perished in this region, either through cold or starvation, and were found lying dead upon the barn floors in rows.

Dimensions.—Average measurements of eighteen specimens: length, 6·95; stretch, 12·85; wing, 4·67; tail, 3·30; bill from nostril, ·24; gape, ·58; tarsus, ·45; middle toe, ·46; its claw, ·21.

54. *Tachycineta bicolor*, (Vieillot). WHITE-BELLIED SWALLOW. A summer resident; breeds; abundant during its migrations. Arrives early in April (May 2, 1874; April 30, 1875; 21, 1876, 17, de Nottbeck, at Fishkill; 25, 1877 [shot at Fairfield, Connecticut, on the 7th]; 20, 1878; 22, 1879), remaining till autumn. It breeds in holes, in trees standing in the water, at the borders of ponds and streams.

Dimensions.—Average measurements of fifteen specimens: length, 5·90; stretch, 12·66; wing, 4·70; tail, 2·35; bill from nostril, ·22; tarsus, ·45.

55. *Petrochelidon lunifrons*, (Say). EAVE SWALLOW; CLIFF SWALLOW. A common summer resident; breeds. Arrives in April (May 22, 1874; April 30, 1875; May 2, 1876; 21, 1877; 9, 1878; April 16, 1879), and spends the summer, departing in September (10, 1876).

This bird of remarkable history breeds in large colonies. It commences nidification early in June. It formerly nested in large communities upon the stone buildings of the West Point Military Academy.

Giraud gives the following account ("The Birds of Long Island," p. 38, 1844) of this species: "The appearance of this Swallow in the lower parts of the State of New York is quite recent. The first that I have known to have been observed in this vicinity, was shot at Manhattanville, in 1842, by Mr. Lawrence. In the month of June of the present year, a few specimens were seen in the suburbs of Brooklyn by Mr. Brasher, and in the latter part of August I met it at Gravesend. Previous to this year, I have no knowledge of its occurring on Long Island; but I should not be surprised if even in a few years it were found quite common. On Long Island I am not aware that the Cliff Swallow has been known to breed; but Mr. Bell has informed me that he found its nest near his residence in Rockland County, in the month of May last—and according to his observations, it had not visited his section previous to the present year."

⁷ Birds of Long Island, p. 36, 1844.

Dimensions.—Average measurements of eleven specimens: length, 6·01; stretch, 12·43; wing, 4·34; tail, 2·01; gape, ·62; tarsus, ·50; middle toe, ·53; its claw, ·25.

56. *Cotyle riparia*, (Linné). BANK SWALLOW; SAND MARTIN. A common summer resident; breeds. The Bank Swallow makes its appearance here with less regularity than the other Swallows. I have not observed it before May (22, 1874; 27, 1875 [at Niagara Falls]; 21, 1877). It remains till about the first of September (August 27, 1877). It is somewhat local in its habitat in summer. In the month of August immense numbers are found, crowding the telegraph wires along the railroad, where it crosses Constitution Island; it associates with the other species of Swallows, which are then so abundant there that I once brought down no less than three represented genera of Swallows at a single discharge of my gun.

Dimensions.—Average measurements of nine specimens: length, 5·20; stretch, 10·85; wing, 3·95; tail, 2·00; bill from nostril, ·18; gape, ·52; tarsus, ·45; middle toe, ·39; its claw, ·21; outer toe, ·26; its claw, ·14.

57. *Stelgidopteryx serripennis*, (Audubon). ROUGH-WINGED SWALLOW. A rare summer resident; breeds. As already noted, in the "Bulletin of the Nuttall Ornithological Club," Vol. III, No. I, p. 46, January, 1878, I captured a female of this Carolinian species, sitting upon its four fresh eggs, in May, 1874. The nest was built in a bank, beside a pond; during its construction the birds were often seen to alight close together, on a board-fence, from which they descended after the rough materials of which the nest was composed,—hay and feathers. The eggs were pure white; one of them measures ·80 × ·53 of an inch.

I saw what I thought to be a bird of this species when in company with Mr. C. H. Eagle, on July 4, 1878, near the Cadet camp at West Point. On July 24, 1879, I saw several Rough-winged Swallows upon the telegraph wires, near Constitution Island, and shot one fine specimen.

Dimensions.—Measurements of No. 1,967, ♂, July 24, 1879, E. A. M.: length, 5·62; stretch, 12·10; wing, 4·12; tail, 2·05; bill from nostril, ·17; gape, ·55; tarsus, ·43; middle toe, ·39; its claw, ·17; outer toe, ·25; its claw, ·12.

58. *Frogne subis*, (Linné). PURPLE MARTIN. A summer resident. It formerly bred abundantly in nearly all of the river towns along the Hudson; but it is now much less numerous than it formerly was, having been driven away by those detestable pests—the European Sparrows. I have rarely met with it during its migrations, and have not been able to procure a single specimen. At Highland Falls, I have only seen it on the following occasions: April 9, 1873, and May

26, 1874. I observed a large colony of them at Newburgh, and another at Poughkeepsie, several years ago; but I am informed that their numbers have decreased very much in both cities since the Sparrows became numerous.

Family, AMPELIDÆ.

59. Ampelis garrulus, Linné. BOHEMIAN WAXWING. A rare winter visitant. Dr. F. D. Lente has a very handsome specimen in his collection, which was shot near his residence at Cold Spring, on the Hudson, several years ago, as I have previously recorded, in the "Bulletin of the Nuttall Ornithological Club," Vol. III, No. 1, p 46, January, 1878.⁸ His son, Wm. K. Lente, informed me that he shot at several Bohemian Waxwings that were in an evergreen tree, close to their house. This occurred several years after the first specimen was taken.

This nomadic species is of exceedingly rare occurrence as far south as this latitude, in the Atlantic States. Audubon furnishes the earliest record of its occurrence, which reads as follows:⁹ "In the autumn of 1832, whilst rambling near Boston, my sons saw a pair, which they pursued more than an hour, but without success. The most southern locality in which I have known it to be procured, is the neighborhood of Philadelphia, where, as well as on Long Island, several were shot in 1830¹⁰ and 1832." Since that time there have been a few recorded instances of its capture in Southern New England, including Massachusetts and Connecticut. DeKay, in treating of this species, remarks:¹¹ "The specimen from which our figure was taken, was shot in the autumn of 1835, in the neighborhood of this city [Albany?]."

Dr. Charles G. Abbott, in his "Catalogue of Vertebrate Animals of New Jersey," (p. 774),¹² gives the following notice: "A northern species, that is occasionally shot as far south as New Jersey. The author has seen two specimens, one shot in Cape May County, the other in Morris County."

60. Ampelis cedrorum, (Vieillot). CEDAR BIRD; CAROLINA WAXWING; CHERRY BIRD. A common, gregarious species; resident, breeding abundantly. This strikingly handsome bird is numerous with us throughout the year; but it is somewhat locally dispersed, and

⁸ Dr. Lente has supplied me with the following particulars: "The Bohemian Chatterer referred to was found dead, in Genl. Morris's grounds [Cold Spring], by Mr. Wm. Paulding. I cannot give the year. F. D. Lente."

⁹ Ornithological Biography, Vol. IV, p. 463, 1838.

¹⁰ Not 1831, as incorrectly stated by Dr. Coues, in Birds of the Colorado Valley, Part First, p. 465, 1878.

¹¹ Zoology of New York, Part II, Plate 26, fig. 57, 1844.

¹² Published in Cook's Geology of New Jersey, 1868.

most particularly so in winter. Then I have noticed that large flocks will occupy a very limited area of country, perhaps remaining there for several weeks at a time; and then all suddenly disappear from the place, after which no more Waxwings may be seen for a long period, at that particular spot. These erratic movements are doubtless due, in some cases, to the exhaustion of its food supply; but in general they must be attributed to a roving and eccentric disposition, such as characterizes its distinguished cousin, the Bohemian Waxwing. As has been observed in other wandering species, there is also an element of uncertainty with regard to its season of reproduction. It commonly begins to build its nest early in June (I found two nests, each containing five eggs, on June 12 and 18, 1878), but I have a record of taking its fresh eggs as late as September 11 (1871).

In winter, the Cedar-birds subsist in great measure upon berries, and principally those of the red cedar (*Juniperus virginiana*). From this circumstance, they have acquired their most familiar name of Cedar-birds. In my neighborhood, they get most of their food among the cedars and sumachs, down by the river; but there are some tall maple-trees in front of my house, which seem to possess peculiarly strong attractions for them, so that, as soon as their crops have been comfortably filled, the whole flock flies up to these trees to spend the interval between meals. They are extremely fond of drinking, and bathing, often descending to the gutters upon the roof for the purpose. During rainy days they do not seek any protection from the wet, but sit quietly, most of the time, with top-knots flattened, looking just a trifle depressed in spirits, as well as literally crest-fallen. They rid their silky plumage of rain-drops by occasional, vigorous shakes; and sometimes a restless individual will fly out in a circle, for exercise or diversion, returning again to the same twig which it left. A flock that is thus quietly settled can be conveniently examined, and a careful inspection will show that, although the birds form a somewhat compact group, there is a division, more or less distinct, into separate couples—the birds sitting in twos. This distribution, in pairs, is most apparent upon the border of the flock, where their numbers are least. I have repeatedly selected a couple, and shot both birds at once: they invariably proved to be of opposite sexes. As this occurred in winter, I infer, either that the species is in the habit of mating at a very early season, or, else, that their connubial attachment is of long duration. I append the following note from my journal: "March 24, 1879. A flock of Cedar-birds remained in the trees about the house all of to-day. I observed that they separated into pairs; and they are probably mated already. Two would separate themselves from the mass of their brethren, and edge towards each other, making alternate advances, and, at last, applying their bills together, doubtless as a means of caressing."

We are especially indebted to the Cedar birds for the part that they have taken in destroying the insect-pest, which for several years past has carried such wide-spread havoc among the elm-trees of this region.¹³ During the summer months every tree of this genus (*Ulmus*) bears the evidence of ravages committed by this noxious insect, whose devastating action is evidenced by the blighted foliage. Early in the season, in some cases, the trees are completely denuded of their leaves, which reappear again, late in autumn, just before the frosts come to destroy them a second time. Energetic measures have been adopted for the preservation of those trees which are desired for shade, or ornamental purposes; and various devices have been resorted to, to destroy this troublesome insect. None of these efforts have, however, been crowned with a large measure of success. The Cedar-birds have accomplished far more towards its extirpation than have all other causes combined. Frequenting the elms where this insect abounds, the Waxwings devour immense numbers, not only of the winged insect, but also of the larvæ. They capture the adult insects upon the wing, in the manner of the Flycatchers, and eagerly search the trunk and branches for their crawling larvæ, which are swallowed with the greatest avidity.

In the Nuttall Bulletin (Vol. III, No. 2, pp. 70 and 71, April, 1878), I have described certain minor variations in color, and in the ornamentation of the wings and tail, in high conditions of this species. They have attracted the attention of various writers (especially Baird, Coues and Brewster), who have described the usual differences. These consist, in the presence or absence of yellow or white spots upon the extremity of the remiges, and in the distribution of the red wax-like appendages which adorn the tips of the quills. The yellow or white spots on the remiges, when present, are confined to the primary quills. They are only present in a few cases, and are usually of small size, though occasionally as distinct as are those of the rectrices. They may be entirely white, entirely yellow, or a mixture of both colors. In the latter case, there is either a proximal band of white, succeeded by a yellow one that blends with the first; or they may be as described by Mr. Brewster,¹⁴ "tipped broadly with white, and in the centre of each white spot a smaller one of yellow." I have recently seen several examples having distinct yellow tips to a few primary quills. The red horny appendages, which are usually confined to the tips of the secondary remiges, have also been found upon

¹³An entomological friend, to whom I sent some of the animals in question, informs me that it is *Diabrotica (Galleruca) calmariensis*; but, here, we call them "elm-flies."

¹⁴Bulletin of the Nuttall Ornithological Club, Vol. III, No. 2, p. 64, April, 1878.

several primaries, each of the rectrices, and, in one specimen, upon the longest feather of the lower tail-coverts. Mr. George N. Lawrence also states:¹⁵ "I have noticed some peculiarities in color of the wax-like appendages on the wings; in a specimen, presented by Mr. Chas. Galbraith, they are of a light pink, the plumage is as usual except that the ends of the tail-feathers are very pale; another in Mr. Bell's possession had these appendages yellow." These are the variations from the type. In young birds, the yellow band at the extremity of the tail is reduced to a mere trace. In certain stages, only the distal border is yellow, the rest of the band being white. One specimen (No. 1,843, ♀ ad., April 2, 1879, Highland Falls, N. Y., E. A. M.) has the tail very slightly bordered with red, at the extremity, beyond the yellow band.

Dimensions. — Average measurements of sixty-three specimens: length, 7·19; stretch, 11·77; wing, 3·70; tail, 2·37; culmen, .41; bill from nostril, .26; gape, .71; tarsus, .66; middle toe, .59; its claw, .25.

Family, VIREONIDÆ.

61. Vireo olivaceus, (Linné). RED-EYED VIREO. An abundant summer resident; breeds. Arrives from the South in May (18, 1873; 12, 1874; 20, 1875; 16, 1876; 16, 1877; 4, 1878; 10, 1879), staying until October (8, 1874; 4, 1876).

Four species of this genus pass the summer in the Highlands, and breed. All of them build pendulous nests, attached by the brim to the fork of a bush or tree; but none are so abundant, or so universally recognized and admired, as are the Red-eyed Vireos. Soon after their arrival from the South, they commence nesting. I have noted in my journal the discovery of freshly-completed nests, on May 22, 1877; 24, 1878: also of complete suites of eggs, taken June 2, 1876; May 29, 1877; 28, 1878. Their nests are very neat structures, composed of various pliable materials compactly woven together, and lined inside with fibres of inner bark. Pieces of paper are frequently pasted all over the outer surface, making a very enduring wall. Vireos' nests are favorite receptacles for the parasitical eggs of the Cowbird (*Molothrus ater*). Their loud song and confiding manners make the Red-eyes very agreeable inhabitants of our groves and orchards, and serve to reveal their presence to persons not initiated into the mysteries of ornithological science.

Dimensions. — Average measurements of eighteen specimens: length, 6·23; stretch, 10·17; wing, 3·20; tail, 2·20; culmen, .52; gape, .75; tarsus, .70; middle toe, .40; its claw, .20.

62. Vireo gilvus, (Vieillot). WARBLING VIREO. A summer resi-

¹⁵Ann. Lyc. Nat. Hist., Vol. VIII, p. 285, April, 1866.

dent; breeds; very much less numerous than the preceding species. Arrives early in May (20, 1875; 7, 1876; 9, 1877; 9, 1878; 8, 1879), and remains till autumn.

Dimensions.—Average measurements of six specimens: length, 5·80; stretch, 9·07; wing, 2·85; tail, 2·14; culmen, .46; bill from nostril, .30; gape, .68; tarsus, .72.

63. Vireo philadelphicus, (Cassin). BROTHERLY-LOVE VIREO; PHILADELPHIA GREENLET. In the "Bulletin of the Nuttall Ornithological Club," Vol. III, No. 1, p. 46, January, 1878, I recorded the capture of the first Brotherly-love Greenlet in this State as follows: "I have a single male specimen of this scarce species in my collection, taken near here. It was shot by my friend, Mr. William K. Lente, at Cold Spring, as it hopped about in a tree-top, September 24, 1875. This example exhibits the intensity of yellow color on the under parts which characterizes the *autumnal plumage*." Mr. Frank R. Rathbun, in his "Revised List of Birds of Central New York," p. 16, April 17th, 1879, states that it is "found regularly in the Spring migrations." The species was not mentioned in the original "Rathbun-Fowler List," published in the "Auburn Daily Advertiser" of August 14, 1877. From information lately received, I am able to predict that additional captures, in other parts of New York, will be recorded ere long.

Dimensions.—Measurements of my specimen: [length, 4·75; stretch, 7·62. W. K. Lente] wing, 2·52; tail, 1·93; culmen, .39; bill from nostril, .28; gape, .57; tarsus, .65.

64. Vireo flavifrons, Vieillot. YELLOW-THROATED VIREO; YELLOW-THROATED GREENLET. A summer resident; breeds. Most numerous during the spring and fall migrations. Arrives early in May (15, 1874; 16, 1875; 8, 1876; 12, 1877; April 27, 1878, W. C. Osborn), remaining till about the first of October (September 19, 1874).

The Yellow-throated Vireo is a noisy, chattering species, capable of producing a very fair musical entertainment when so disposed. Its nest, very similar to that of *olivaceus*, is built the last of May, or early in June. I caught a male bird, sitting upon two fresh eggs, as early as May 25 (1874). In the spring, when this pretty species is abundant, it passes through in straggling bands of some size.

Dimensions.—Average measurements of twelve specimens: length, 5·95; stretch, 9·78; wing, 3·05; tail, 2·10; bill from nostril, .36; gape, .72; tarsus, .76; middle toe, .47; its claw, .20.

65. Vireo solitarius, (Wilson). SOLITARY VIREO; BLUE-HEADED VIREO. A common spring and fall migrant. Arrives about the first of May (9, 1876; April 28, 1877; May 13, 1878; 8, 1879), and passes through before June (seen May 24, 1876; 18, 1877). In autumn, it passes through during September and the first part of October. It is frequently seen associated in good-sized flocks. I have seen a splen-

did exhibition of courage on the part of this plucky little bird, when disabled by a wound. It flew at me, when I attempted to catch it, and used both beak and claws with all its might.

Dimensions.—Average measurements of fourteen specimens: length, 5·61; stretch, 9·42; wing, 2·96; tail, 2·15; culmen, .41; bill from nostril, .28; gape, .64; tarsus, .73; middle toe, .44; its claw, .21.

66. Vireo noveboracensis, (Gmelin). **WHITE-EYED VIREO;** "**POLITICIAN.**" An abundant summer resident; breeds. Arrives early in May (14, 1875; 17, 1876; 21, 1877; 4, 1878; 12, 1879), and remains till autumn.

This handsome species is an inhabitant of swampy thickets. For a very pleasant and amusing account of its habits, I would refer the reader to John Burroughs' chapter on "The Return of the Birds,"¹⁶ which he wrote when residing in the Highlands. The name of "Politician," given above, was first used by Wilson, who says:¹⁷ Outwardly its nest "is constructed of various light materials, bits of rotten wood, fibres of dry stalks of weeds, pieces of paper, commonly newspapers, an article almost always found about its nest, so that some of my friends have given it the name of the *Politician*." I have observed the habit of using newspapers for the construction of nests, in the Red-eyed Vireo; but, in this region, the White-eyed Vireo usually repairs to remote swamps to breed, where newspaper literature is rarely encountered. It displays a high degree of architectural skill, however, in all cases. I have found a nest, in which the eggs were already being incubated, as early as May 28 (1877). The male sings a sweet, and curious song, while his mate is sitting upon her eggs; and he displays great uneasiness whenever the nest is approached. The female, like the rest of the Vireos, is a very close sitter, and I have taken her off the nest, before she could be induced to leave it. On such occasions she is very pugnacious; and, on being released, instead of making good her escape, she comes back and scolds one most vigorously, in a tone resembling that of an irate Catbird. I have visited its nest in the evening, and found the mother sleeping soundly, breathing hard, and with her head tucked under the feathers. The nest is fastened to a forked branch, within a few feet of the ground; commonly a laurel (*Kalmia*) is selected.

Dimensions.—Average measurements of five specimens: length, 5·27; stretch, 7·85; wing, 2·37; tail, 1·95; culmen, .42; bill from nostril, .29; gape, .65; tarsus, .70; middle toe, .62; its claw, .18.

Family, **LANIIDÆ.**

67. Lanius borealis, Vieillot. **GREAT NORTHERN SHRIKE; BUTCHER-BIRD.** A winter visitant; occasionally somewhat numerous. It

¹⁶Wake-Robin, Chapter I, 1871.

¹⁷American Ornithology, Vol. II, p. 166, 1810.

appears from the North about the first of November (16, 1874; 9, 1878 [W. C. Osborn]), and retires about the first of April (March 31, 1873, 28, 1877). I have witnessed many deeds of daring on the part of this remarkably handsome, though bloodthirsty bird; but its temerity and rapacious exploits have been so often described, that I will only mention one occurrence—the last noted in my journal: “When walking upon the Railroad, near Garrisons, I started a Snowbird (*Junco hyemalis*) from the track, a few paces in advance. A Shrike instantly dashed down from the ledge above in hot pursuit. The Snowbird made every effort to escape, doubling and twisting, and crying most piteously as it endeavored to elude its adversary by dashing into a clump of hemlocks that seemed to offer protection; but the Butcher-bird followed closely all of its windings, till at last the terrified creature flew on top of the ledge, followed closely by its enemy. I did not witness the result, but have no doubt that it ended in a tragedy.” Such incidents are familiar to all who have made the Shrike’s acquaintance; and, very likely, it was on just such an occasion that the reader was first introduced to this fierce little butcher, who is so devoid of fear of man, when in quest of game.

Dimensions.—Average measurements of three females: length, 10·07; stretch, 14·05; wing, 4·41; tail, 3·43; culmen, .71; bill from nostril, .55; gape, 1·10; tarsus, 1·03; middle toe, .61; its claw, .28.

Family, FRINGILLIDÆ.

68. Pinicola enucleator, var. canadensis, (Brissolon). PINE GROSBEAK. An irregular winter visitant; sometimes abundant.

This beautiful species wanders southward at irregular intervals, and only visits us during the coldest winter weather. It usually appears in large flocks, which are composed principally of females and young birds. The red males are seldom seen. I first saw the Pine Grosbeak on November 22, 1874, when a large flock alighted upon a Norway spruce (*Abies excelsa*) before my house, and commenced to feed upon the seeds of the cones. All were adult males, and presented a very beautiful appearance. The species was not again met with until the first of December, when large numbers were present. It continued to be plentiful until the following March; and some stayed as late as March 25. The males in red plumage were not more than two per cent. of any of the numerous flocks that I examined during the winter, with the single exception of the one first seen, which, singularly enough, was composed entirely of old males.

During the winter of 1875–76, Pine Grosbeaks were seen twice. I saw two flying over Iona Island, on December 11, 1875; and, on January 12, 1876, I shot three specimens from a small flock found feeding upon sumach berries and seeds of hemlock spruce (*Abies canadensis*), near Fort Montgomery.

I next came across them on the morning of November 29, 1878. A flock was found in an orchard feeding upon seeds of apples, both on the trees and upon the ground. My gardener, near whose house they were, informed me that they had spent several days there, previous to my arrival at home. I first heard their call-note, and, on looking about, saw them gleaning upon the ground close at hand. When shot at, they uttered a mournful cry, and, sometimes, while feeding, a high note resembling that of the Purple Finch (*Carpodacus pupureus*). This flock stayed in the orchard until I left home, on December 2. They were very quiet, gentle in their manners, and so unobtrusive, that they might easily have been passed by without notice. When rudely frightened, they would fly to the nearest tree, and there sit motionless for a short time; then they dropped silently to the ground, and resumed their avocations in silence. These birds seemed contented, and not in the least restless. I encountered several other flocks during my brief stay; and nothing was more remarkable than the amount of silence they preserved, considering the large preponderance of females present. Some were so tame that they could have been readily captured by means of a noose or hand-net. No adult males were seen, though I secured an immature specimen that was about one-half red; another example was in the dullest plumage, so that, before skinning, I supposed it to be a female, but a careful dissection showed that it was masculine. Some were moulting their tail-feathers. Several specimens taken had a few of the outer rectrices only an inch or two long; these were always the outer ones, and only on one side.

I saw a Pine Grosbeak in the Central Park, New York City, on December 20, 1878.

Dr. Clinton L. Bagg saw five Grosbeaks, among them a fine red male, near West Point, N. Y., on December 29, 1878; they were picking at some decayed apples by the wayside. We saw several females, near the same place, on the following day.

The Pine Grosbeak's song is one of the finest, but I have only been privileged to listen to it on a single occasion—in March, 1875. The weather at the time was intensely cold. The preceding winter had been one of unusual severity; and the ice was still many inches thick upon the Hudson. The Purple Finches, though present, seldom felt inclined to sing; and the few hardy Song Sparrows that had braved the winter were ensconced in cosy nooks among the flags, behind some sheltering ledge of rock, where, only on the warmest days, they made abortive attempts at a song. These were the only performers except an occasional Red Crossbill; and bird music was rare indeed. It was one frosty morning, as I was following the course of a stream that flowed at the bottom of a deep ravine, that I heard, most unexpectedly, a new song. It proceeded from far up the glen. The notes

were loud, rich and sweet. I listened to them with a thrill of delight and wonder, and then pressed forward to identify the new vocalist. Soon I discovered perched upon the top of a tall hemlock, a beautiful red Pine Grosbeak—the author of one of the most delicious songs that I have ever heard. Its carmine or rose-colored plumage, and its mellow notes, were a feast alike to the eye and ear; and, though I may never hear the Pine Grosbeak sing again, I shall ever cherish towards it feelings of admiration and gratitude for the revelation of beauty and melody which I so keenly appreciated on that occasion. We cannot but wish that this Grosbeak was a more frequent sojourner with us; for its bright hues would add life and color to our sombre winter scenery, and its fine song would afford us much enjoyment.

Except the Red Crossbill (*Loxia curvirostra*, var. *americana*), there are no birds so gentle as the present species. They appear to be utterly devoid of fear of man. If their ranks are thinned by the gunner, the survivors will rarely be driven away, but come close up to the hunter and hop from branch to branch in his vicinity, scrutinizing him closely and uttering a reproachful note like that of the Fox Sparrow (*Passerella iliaca*); they often fly down to inspect the dead bodies of their comrades lying upon the ground. Their flight is floating and graceful. They eat seeds of coniferous trees, and of various weeds that grow in pastures or by the wayside. They search in orchards for decayed apples, and eagerly extract the seeds; but the seeds of maple, and berries of red cedar, are their staple articles of food. They also eat other kinds of berries and buds. Wherever there is a supply of good water they congregate; for they are extravagantly fond of bathing.

Wilson had a Grosbeak that was procured in the Highlands, upon which he made the following interesting observations:¹⁸ "I have kept one of these Pine Grosbeaks, a male, for more than half a year. In the month of August those parts of the plumage which were red became of a greenish yellow, and continue so still. In May and June its song, though not so loud as some birds of its size, was extremely clear, mellow and sweet. It would warble out this for a whole morning together, and acquired several of the notes of a Red-bird (*L. cardinalis*), that hung near it. It is exceedingly tame and familiar, and when it wants food or water utters a continual melancholy and anxious note. It was caught in winter near the North river, thirty or forty miles above New York."

Since Wilson's time, the Pine Grosbeak has been found in the Hudson Valley by various writers—among them Giraud, DeKay and Lawrence. The former author wrote:¹⁹ "In the autumn of 1827,

¹⁸ American Ornithology, Vol. I, p. 82, 1808.

¹⁹ Birds of Long Island, p. 129, 1844.

large flocks of Pine Grosbeaks visited Long Island, Hoboken, and various places in the lower parts of New Jersey and New York. Since that period until the present year, I have not seen or heard of its occurring on Long Island. In the interval, a few have been observed in Rockland County, in which section, as with us, it was quite common during the month of January of the present year [1844] Although large numbers were during the winter observed in the vicinity of New York, very few adults were procured."

Dimensions.—Average measurements of sixty-two specimens:— length, 9·08; stretch, 13·90; wing, 4·36; tail, 3·67; culmen, ·54; bill from nostril, ·43; gape, ·60; tarsus, ·88; middle toe, ·63; its claw, ·35.

69. *Carpodacus purpureus*, (Gmelin). PURPLE FINCH. A permanent resident; breeds. Though not very numerous in summer, a few commonly nest near my house, building in the tops of tall cedars or Norway spruces. Mr. William K. Lente found its nest at Cold Spring, in 1874. Mr. R. F. Pearsall found a nest at Bayside, Long Island, on June 15, 1878; he thinks that it is "the most southern point at which the species has been found breeding."²⁰

These handsome birds are generally abundant in winter. Their song, which is loud and sweet, is indulged in by both sexes throughout the autumn and winter, as well as during the love season. Females are heard to sing, in winter, as commonly as the males. Adult males, in winter, are sometimes very scarce, though the opposite sex is well represented; this is frequently as marked as was the case with the Pine Grosbeak and Lesser Redpoll, in the early part of the winter of 1874-75. They are gregarious, often assembling in very large flocks. On some occasions they are quite wild, and, on being approached, all rise at once on wing with a loud, rushing noise, accompanied by certain peculiar wild notes, which produces quite a startling effect. They feed upon seeds of the iron-wood (*Ostrya virginica*), and red cedar berries. When feeding in flocks, the rustle of their wings is constant, and their united chirping produces a singular effect. Their whirring flight and chattering notes remind one of the flight of flocks of House Sparrows. I have found immense flocks in March, eating the seeds of hemlock spruce (*Abies canadensis*).

The great bulk of this species passes north during the spring migration. As usual in general migrations, the males precede their partners by several days. At that season they often frequent ploughed fields, in company with the Rose-breasted Grosbeaks and Indigo Birds, where they do some damage by picking up the newly-sown grain. Like the Blue Jay and some other birds, they appear to be unusually lively during a rain-storm; and, in winter, at the commencement of a snow-storm, they sometimes lie to the loftiest tree-top,

²⁰ See Bulletin of the Nuttall Ornithological Club, Vol. IV, p. 122, April, 1879.

and begin to sing, as if from pleasure or excitement. They destroy young buds, and, together with the Rose-breasted Grosbeak, eat large quantities of the stamens and petals of cherry and apple blossoms. In April, blossoms of the maple are eaten. Females in high condition, like those of the Pine Grosbeak, sometimes have a distinct red suffusion over the plumage.

In his "Revised List of Birds of Central New York," Mr. Rathbun gives, concerning this species, the following: "An abundant summer resident. Arrives in March—March 9, 1878. Common the second week in April. Breeds. Departs in October." I think that it will in time be found there, at least occasionally, in winter; for I saw a few at Locust Grove, in Lewis County, N. Y., during the last of December and first of January, 1877-78.

Dimensions.—Average measurements of thirty-eight specimens: length, 6·22; stretch, 10·16; wing, 3·24; tail, 2·29; culmen, ·46; gape, ·58; tarsus, ·68; middle toe, ·53; its claw, ·19.

70. Loxia leucoptera, Gmelin. WHITE-WINGED CROSSBILL. An occasional visitor from the North.

Early in the winter of 1874-75, these birds appeared sparingly near Cold Spring, where Mr. William K. Lente saw them first, in the early part of December, soon after the Pine Grosbeaks became numerous. Mr. Frederic S. Osborn found them quite common during the winter, at Garrisons; the earliest record of its occurrence noted in his journal being December 28, 1874. I did not meet with any before January 14, 1875, when I found an immense flock near Fort Montgomery, in a dark grove of hemlocks. They were in company, but not mixing, with flocks of Red Crossbills (*Loxia curvirostra*, var. *americana*). As they flew from tree to tree, they uttered a loud, rattling cry; and they were far shyer than the Common Crossbill. After this the species was frequently seen in different-sized flocks, and remained until March 10, when they were in full song. Their flight is strong and swift; and they are so active and noisy, that a flock of a dozen makes a tree appear as if filled with them. In spite of an apparently malformed bill, their song is one of remarkable beauty.

Wilson found a few White-winged Crossbills in the great pine forests of Pennsylvania; and Bonaparte, in his "American Ornithology" (Vol. II, p. 276, 1828), furnishes the following: "During four years it had escaped my careful attention, and now writing (in the first week of November, 1827) they are so abundant, that I am able to shoot every day great numbers out of flocks that are continually alighting in a copse of Jersey scrub-pine (*Pinus inops*), even opposite my window." Giraud observes:²¹ "In this locality [Long Island]

²¹ Birds of Long Island, p. 131, 1844.

this species is not as frequently observed as the preceding [*L. curvirostra*, var. *americana*], in the general habits of which it resembles. Like the former, it prefers the northern part of the continent, and only resorts to our milder climate when driven by severe weather."

Dimensions.—Average measurements of ten specimens: length, 6·05; stretch, 10·18; wing, 3·27; tail, 2·41; culmen, ·62; tarsus, ·61.

71. *Loxia curvirostra*, var. *americana*, (Wilson). AMERICAN RED CROSSBILL. An occasional visitor, usually in winter; sometimes abundant.

Red Crossbills were extremely common during the winter of 1874-5. They were first seen in December, by my friend, the late Frederic S. Osborn. I found three birds feeding on the seeds of pitch pines' cones (*Pinus rigida*) on January 11. After that they were seen commonly, and continued to be abundant until the 10th of April, at which time they were singing very sweetly. The Red Crossbills are surprisingly gentle, not in the least objecting to being approached to within a few feet. I used frequently to visit a certain dense grove of hemlocks (*Abies canadensis*), that was constantly inhabited by large flocks of Crossbills of both species, for the purpose of watching their singular habits. The White-wings were somewhat shy and suspicious, and extremely restless, constantly flying from the top of one tree to that of another, and keeping up an incessant rattling cry; but the Red Crossbills were found in larger numbers frequenting the lower drooping branches, to which they clung in every variety of posture, gleaned busily the while, seldom roving about, and inclined to be noisy and chattering, though their notes are very unlike those of the other species, and more nearly resemble those of the European Sparrow. Their dexterity in extracting the seeds from cones is quite remarkable, and the shower of refuse materials sent down from a tree-top, is, of itself, sufficient to apprise one of their presence.

The nest of this Crossbill was found at Riverdale, N. Y., by Mr. Bicknell, and contained three eggs on April 30, 1875.²² Riverdale is on the Hudson River, sixteen miles north of New York Bay. For a very interesting account of the Red Crossbill at Riverdale, see Mr. Eugene P. Bicknell's article, in the "Nuttall Club Bulletin" for January, 1880, pp. 7 to 11.

I saw a large flock of Crossbills at Fort Miller, Washington County, N. Y., on February 27, 1877.

Dimensions.—Average measurements of eighteen specimens: length, 6·19; stretch, 10·72; wing, 3·40; tail, 2·13; culmen, ·66; tarsus, ·62.

²² American Naturalist, Vol. X, No. 4, p. 237, April, 1876.

A LIST
OF THE
BIRDS OF HUDSON HIGHLANDS
WITH ANNOTATIONS.

PART V.

BY EDGAR A. MEARNs.

[From the BULLETIN OF THE ESSEX INSTITUTE, Vol. XII, pp. 11-25.]

A List of the Birds of the Hudson Highlands, with Annotations.

By EDGAR A. MEARNS.

[Continued from page 204, Vol. XI.]

72. *Aegithus linaria* (Linné). RED-POLL LINNET; LESSER RED-POLL. An occasional winter visitant; sometimes very abundant.

In 1874, the Lesser Red-polls appeared in flocks about the first of December, and were very abundant until April. For some time after their first appearance, very few adults were seen, nearly all being young birds; but soon old males with rosy breasts and ruby crowns began to come in immense flights, till the swamps of birch-trees which they inhabited, and upon whose seeds they fed, were absolutely swarming with them. So great were their numbers that the supply of birch seeds soon gave out, and then they scattered over the entire region, feeding largely upon seeds of the alder, and of various weeds. During the month of March, the Red-polls far exceeded in numbers the aggregate of any single species that I have ever seen. They were very tame, feeding close to the roadsides and in yards about houses; and, go where one would, they were always found in abundance. They were in full song during the last month of their stay, and the males were in particularly handsome plumage. Their notes resemble those of the American Goldfinch (*Chrysomitis tristis*); but their flight is swifter, and less undulating. They are easily domesticated, and make nice pets.

Mr. William C. Osborn shot a female, on November 9, 1878, near Garrisons; it was feeding in company with the Tit-lark (*Anthus ludovicianus*), in a weedy field near the Indian Brook.

I saw a single Red-poll in a birch-tree in the Central Park, N. Y., on December 20, 1878. During the last week in December and the first day of January (1878-79), they were quite numerous all through the Highlands. Nearly all of the specimens shot were young males, though one or two adult males and females were secured. Dr. Fisher, on the other hand, found only females, at the same time, at Sing Sing, N. Y. On February 8, 1879, Dr. Clinton L. Bagg found a number of Red-polls in some weedy fields on Ward's Island, N. Y.

Dimensions.—Average measurements of fifty-seven specimens:—length, 5·32; stretch, 8·68; wing, 2·80; tail, 2·32; culmen, .36; tarsus, .56; middle toe, .36; its claw, .23.

73. Chrysomitis pinus (Wilson). PINE GOLDFINCH; PINE LINNET. An occasional winter visitant; sometimes a winter resident, and abundant.

In 1874 the Pine Linnets were found in the hemlocks, feeding upon the cones, as early as October 16. They were frequently met with throughout the winter in large flocks in the alder swamps, accompanying flocks of Red-poll Linnets. Since then I have only seen them on two occasions: in Lewis County, N. Y., January 1, 1878; and on February 6 (same year), when they were numerous at Fort Montgomery (four miles south of Highland Falls), associating and feeding with large flocks of Yellowbirds (*Chrysomitis tristis*) upon the cones of the hemlock.

A specimen was taken by Mr. Frederic S. Osborn at Garrisons, October 17, 1874; and Mr. William C. Osborn took specimens there on November 16, 1878. Mr. Theodore Roosevelt took it August 27, 1874, in Franklin County, N. Y.¹

Dr. C. Hart Merriam's notice of the "Breeding of the Pine Linnet in Northern New York," published in the "Forest and Stream and Rod and Gun" (Vol. X, No. 24, p. 463, July 18, 1878), is so interesting that I cannot forbear transcribing it entire: "Few birds are more erratic in their habits than the siskin or pine linnet. Occurring to-day, perhaps, in such numbers that one soon tires of shooting them, they are gone on the morrow, and years may elapse before one is seen again. There is, in their melancholy *che-a*, uttered at intervals as small flocks pass in short, waving swoops, far overhead, something sadly suggestive of the cold bleak winds that sweep their northern homes. Yet they are warmly clad, and seem rather to enjoy the wintry blasts that compel most birds to seek a milder clime; and their roaming movements are apparently governed more by some idiosyncrasy in their roving dispositions, and abundance or scarcity of food, than by the severity of the season in the region from which they came."

During the past winter and spring they literally swarmed in Lewis County, N. Y., and thousands of them bred throughout the heavy evergreen forests east of Black River, while many scattered pairs nested in suitable hemlock and balsam swamps in the middle district. They breed remarkably early, and construct large, compact nests, which are usually placed high up on some hemlock or spruce, and well concealed from view. I know of no nest, of equal size, so hard to find. After days of patient search in the evergreen swamps of this vicinity (Locust Grove), Mr. Bagg and myself discovered but a

¹The Summer Birds of the Adirondacks in Franklin County, N. Y. By Theodore Roosevelt, Jr., and H. D. Minot.

single nest. On the 13th of April we were hunting in a low swamp, near White River, when a solitary pine linnet attracted our attention by hopping about on some fallen logs. In a few moments she flew into a large hemlock, which stood apart from the rest, and immediately disappeared. After carefully looking over the entire tree, a limb at a time, Mr. Bagg noticed a bunch of something almost completely concealed by a cluster of small branches. We were not sure that it was a nest at all till a well-aimed stick drove off the parent bird, which was shot and proved to be the female. With great difficulty the nest was secured, and it contained, at that early date (April 13), two nearly fledged young. It was tightly saddled on a large limb, about thirty feet from the ground and nearly fifteen feet from the trunk of the tree, and was so nicely hidden that, from a limb directly above, I could not see it at all. One of the young was skinned, while the other now constitutes a contented member of my sister's "happy family," which previously consisted of an oriole (*Icterus baltimore*), three thistlebirds (*Chrysomitis tristis*) and a nonpareil (*Cyanospiza ciris*). He attained his full growth shortly after his capture; and has since thrived on a mixed diet, though, like his cousins the goldfinches, showing a decided preference for the thickly-seeded spikes of the common plantain (*Plantago major*). Also, like his brighter-plumaged companions, he constantly raises and lowers the occipital feathers when at all alarmed.

In plumage he differs from the adult bird; in having the belly marked with yellow, the wing-bars ochraceous instead of whitish, and the upper parts decidedly tinged with rufus. This rufus cast is due to the fact that the bark-centred feathers of the back are, in the young, margined with fulvous-brown, which is not the case with the old bird. The nest is a very bulky structure for so small a bird, and its rough exterior, loosely built of hemlock twigs, with a few sprigs of pigeon moss (*Polytrichum*) interspersed, is irregular in outline, and measures about six inches in diameter. The interior, on the contrary, is compactly woven into a sort of felt, the chief ingredients of which are thistledown and the fur and hair of various mammals. The cavity is lined with horsehair, and measures two inches and a quarter in diameter by an inch and a quarter in depth. This nest is much more flat than that described by Dr. Brewer² from Cambridge, Mass., for it measures but two inches in height at its highest point. A considerable mass of dung adheres to the small twigs at one point in its exterior, showing that the bird always "headed" the same way, and was not particularly cleanly in her habits. From the size of the

² Baird, Brewer and Ridgway, Vol. I, p. 482, 1874.

young it is clear that this nest could not have been completed much later than the middle of March.

Not content to let the season pass without making a greater effort to secure their eggs, I accepted on the 15th of April, an invitation from my brother, C. Collins Merriam, to accompany him on an excursion through the densely timbered region about Otter Creek (near the eastern border of Lewis County) and Big Otter Lake (Herkimer County), from which it takes its origin. This entire district lies within the area commonly known as "Brown's Tract," and is Canadian in fauna. Never before at any locality have I seen a species of bird represented by such immense numbers of individuals as here attested the abundance of the pine finch. In every part of the forest, from early in the morning till after the sun had disappeared in the west, there was not a moment that their voices were not heard among the pines and spruce trees overhead. And yet, though among them several days, we were not able to discover a single nest. Never have I searched more faithfully for the eggs of any species, and never has my diligence been rewarded with less success. I at first made a systematic survey of a large number of trees, taking a limb at a time, and then climbed so many that I was barely able to get back to camp, but with no better results.

Their nests are placed so high and amidst such thick evergreen foliage that it is almost impossible to find them. As illustrating the number of this species as well as of the red and white-winged cross-bills (*Loxia curvirostra* var. *Americana* and *L. leucoptera*), it may be worth recording that after firing twenty-two small charges of fine dust shot at the cross-bills as they settled into the top of a single dead hemlock, I picked up fifty-one birds, of which twenty-eight were red cross-bills, eight white-winged, and fifteen pine linnets. I aimed at cross-bills only, killing the linnets by chance. Mr. A. J. Dayan was so fortunate as to secure two sets of their eggs from among the pines near Lyon's Falls (in the Black River Valley). The first was completed March 11, and contained but three eggs on the 18th. The second contained two fresh eggs April 20, and was left till the 25th, but no more were deposited."

Dimensions.—Average measurements of eleven specimens: length, 5·00; stretch, 8·63; wing, 2·76; tail, 1·90; culmen, .43; gape, .47; tarsus, .52; middle toe, .45; its claw, .23.

74. *Astragalinus tristis* (Linné). AMERICAN GOLDFINCH; YELLOWBIRD. A permanent resident; breeds; common.

This pretty species, in winter, associates in flocks, feeding upon the seeds of birch, alder and hemlock, besides those of numerous weeds. They are not generally recognized in their plain, but neat winter dress, as the gayly-attired Yellowbirds of summer. In winter,

large numbers are sold in the New York markets, in bunches, under the name of "reed-birds."

Dimensions.—Average measurements of twenty-nine specimens: length, 5·10; stretch, 8·83; wing, 2·82; tail, 1·95; culmen, ·40; gape, ·43; tarsus, ·54; middle toe, ·42; its claw, ·21.

75. Plectrophanes nivalis (Linné). SNOW BUNTING; WHITE SNOWBIRD. An irregular winter visitant. It sometimes arrives early in November, and remains until March. Mr. Thomas W. Wilson procured specimens on the railroad, at Constitution Island, as early as November 8, 1875. Mr. William Church Osborn saw them near Garrisons, on November 9, 1878. I have seen flocks on the railroad as late as March 12 (1875).

Large numbers of these white-clad visitors from Arctic climes occasionally appear upon the ice of the frozen Hudson: always in severely cold weather, and very often during snow-storms. During the latter part of the winter of 1874-5, when skating up the river, I found large flocks frequenting the sleigh crossings on the Hudson; and smaller bands were numerous along the railroad upon the left bank. I encountered the first flock near Fishkill Landing, where they were feeding, on the sleigh track crossing the river. A number of them were brought down by the discharge of both barrels of my piece, and most of those left alighted upon the nearest trees on shore, but a few returned to their wounded companions, standing erect beside them, and uttering their loud call-note, as if entreating them to come away. They allowed me to come very near before they would forsake their unfortunate companions, and only left them when life was extinct, unless sooner driven away. When these had rejoined the flock upon the bank, the entire body proceeded northward. Subsequently, the species was common all along the Hudson. I did not molest them again, but took good care of the wounded ones, and afterward brought them safe home. They seemed starved, and ate greedily. Their wounds healed very quickly, and, in a few days, they were able to fly about. Soon they became very tame, and would come upon a table to be fed. They were released in the dining-room, where they spent most of the time among some house plants, at the windows; but, from their visits to the table during meals, they became a source of annoyance, and were shut up at those times. Towards spring they became restless, and struggled to get out of their cages, and, on being released, flew to the windows, pecked the glass, and uttered mournful cries.

Upon the railroad, a few flocks are commonly found spending the winter. These soon become begrimed, almost beyond recognition, by contact with the grease and dirt of the track; but they become very fat, for they are abundantly supplied with food,—the grain that

drops through chinks in the cars. Contrary to their usual habits, they are quite arboreal, spending most of the time upon trees, above the track, only descending occasionally to fill their crops, between the passage of trains. Among the mountains on the right bank of the river, I have rarely seen them. When shooting there on December 30, 1878, a flock of five flew overhead, uttering their wild notes, which seem to me to have a very wintry significance, which is quite in keeping with their white plumage and boreal habitat. They are said to occur occasionally at West Point.

The Snow Bunting breeds in the Arctic regions of Europe, Asia and America. A nest, with its complement of four eggs, taken at Akreyri, Iceland, June 13, 1874, was sent to me, together with a number of odd eggs, by Herr Alfred Benzon, of Copenhagen, and I take advantage of this opportunity to describe them. The nest is quite bulky; composed largely of dry grasses, with considerable long, fine, whitish hair interwoven and lining the inside; also a few feathers of some water-fowl, and some of those of its own species. It was built upon the ground, and still has some earth adhering to it. Its external diameter is about 6·00 inches, internal, nearly 3·00; depth, 2·40 externally, and 1·25 internally. The eggs belonging to this set, four in number, were all accidentally broken, but I have mended one of them perfectly, and the rest will answer for the purpose of description. They closely resemble each other in coloration; their ground-color is distinctly greenish-white, quite evenly marked with blotches of pale purplish-brown, and less numerous dashes of umber-brown; the spotting is a little more distinct at their larger ends. The mended egg measured ·88 by ·65 of an inch.

Seven eggs, taken at Akreyri, Iceland, in 1872, are now before me. Their ground-color varies from pale greenish to dirty white; some are so thickly covered with rusty-brown markings as almost to conceal the ground; others are sparsely or thickly spotted with dark umber-brown or sepia, sometimes aggregated at the larger end, sometimes arranged circularly about that extremity, and sometimes pretty uniformly distributed over the whole egg. They measure, respectively, ·94 × ·67; ·94 × ·68; ·90 × ·64; ·91 × ·63; ·85 × ·65; ·85 × ·66; ·88 × ·62.

Dimensions.—Average measurements of ten specimens: length, 6·88; stretch, 12·47; wing, 4·07; tail, 2·70; culmen, ·45; tarsus, ·83.

76. Passerculus savanna (Wilson). SAVANNA SPARROW. Common during spring and autumn; a few are seen during summer, but none in winter. It will probably prove to be a continuous resident; but of rare occurrence during the breeding season, and in winter. During migrations they are especially numerous upon the marshes. They make a whirring noise in flight, are not shy, and their note is a low *tweet*.

Dimensions.—Average measurements of nine specimens: length, 5·68; stretch, 9·10; wing, 2·62; tail, 2·09; culmen, .43; gape, .47; tarsus, .80.

77. **Poecetes gramineus (Gmelin).** BAY-WINGED SPARROW. A summer resident; breeds. Arrives in March (30, 1878), and stays till November. It is found in old, weedy fields, and has a pretty little song in the spring.

Dimensions.—Average measurements of eleven specimens: length, 6·12; stretch, 10·35; wing, 3·06; tail, 2·38.

78. **Coturniculus passerinus (Wilson).** YELLOW-WINGED SPARROW. A summer resident; breeds. Abundant in most parts of the Hudson Valley. In this vicinity there are few localities which suit its habits, and it is, consequently, rare. Mr. Wm. Church Osborn first apprised me of its occurrence, near Garrisons, in some high, sandy fields, where it breeds every summer. A female shot there, May 18, 1878, contained a full-sized ovum.

Dimensions.—Average measurements of three specimens: length, 5·38; stretch, 8·52; wing, 2·38; tail, 1·79; culmen, .47; gape, .51; tarsus, .87; middle toe, .57; its claw, .15.

79. **Ammodramus caudacutus (Gmelin).** SHARP-TAILED FINCH. I have only found it during the month of October (16, 1874; 12, 1877), and at a single locality—on the salt marsh that joins Consook Island to the west shore. Mr. Wm. Church Osborn shot a fine male specimen, in the same place, on October 12, 1878.

Dimensions.—Average measurements of two specimens: length, 5·50; stretch, 7·50; wing, 2·24; tail, 2·00; culmen, .46; gape, .54; tarsus, .87; middle toe and claw, .80.

80. **Melospiza palustris (Wilson).** SWAMP SPARROW. A summer resident; breeds. Arrives from the south in March, and stays till December. Occasionally seen in early winter. It will probably be found to be an occasional winter resident in the Highlands, as it is lower down the Hudson. It is found in swampy places inland, about the shores of ponds, and, most abundantly, on the salt marshes along the river. It builds its nest in a tussock of grass, and lays its eggs about the last of May (23, 1877). Its song is pretty, and differs from those of our other Sparrows. Mr. Francis Butterfass showed me an albinistic specimen that was about one-half white, which he shot at Cold Spring, on the Hudson.

Dimensions.—Average measurements of fourteen specimens: length, 5·89; stretch, 7·90; wing, 2·34; tail, 2·32; culmen, .46; gape, .49; tarsus, .86; middle toe, .61; middle toe and its claw, .85.

81. **Melospiza fasciata (Wilson).** SONG SPARROW. An abundant resident species; breeds. Always present throughout even the severest winters, in favorable situations; its abundance and disper-

sion depending on the character of the winter. But these hardy northerners depart in February, and are succeeded by the hosts of its species which make up the great northward migration, which begins late in February. It commences to build in April, and its first clutch of eggs is commonly deposited late in that month. The nest may be found in various situations—frequently attached to rushes in the marshes. On April 27, 1878, a pair of Song Sparrows were incubating their eggs, in an old nest of the Red-winged Blackbird (*Agelæus phœniceus*). In the same season, young were seen flying by May 18. It is not uncommon to find it sitting upon a late brood of eggs during the month of August. Prof. James M. DeGarmo has a nearly perfect albino, taken at Rhinebeck, on the Hudson.

Dimensions.—Average measurements of twenty-five specimens: length, 6·30; stretch, 8·57; wing, 2·52; tail, 2·62; culmen, ·49; tarsus, ·82; middle toe, ·67; middle toe and its claw, ·85.

82. Junco hyemalis (*Linné*). EASTERN SNOWBIRD. An abundant winter resident. Arrives in autumn about the end of September (30, 1874; October 12, 1875; September 28, 1876; October 18, 1879), and remains till May (1, 1873; 9, 1874; 8, 1875; 5, 1876; April 22, 1878; May 8, 1879; April 23, 1880). It breeds plentifully in the Catskill Mountains, and doubtless on the Shawangunk range in Orange County, N. Y. Mr. Wm. Church Osborn found it at Lake Mohonk, Ulster County, N. Y., in July, 1877. The Snowbird sings very sweetly before leaving us in the spring.

Dimensions.—Average measurements of twenty-four specimens: length, 6·27; stretch, 9·78; wing, 3·03; tail, 2·71; culmen, ·41; tarsus, ·81; middle toe and its claw, ·72.

83. Spizella montana (*Forster*). TREE SPARROW. A very abundant winter resident. Arrives from the North about the end of October (31, 1874; 30, 1876; November 7, 1877; October 26, 1878; November 17 [or earlier], 1879), and departs in April (29, 1874; 29, 1875; 29, 1876; 13, 1877; March 28, 1878; April 28, 1879; April 8, 1880). In the spring it has a very agreeable song, ending in a loud trill. Its food, in winter, consists largely of the seeds of alder and birch.

Dimensions.—Average measurements of twenty-eight specimens: length, 6·36; stretch, 9·46; wing, 2·99; tail, 2·82; culmen, ·41; gape, ·47; tarsus, ·80; middle toe, ·56; middle toe and its claw, ·76.

84. Spizella socialis (*Wilson*). CHIPPING SPARROW. A very abundant summer resident; breeds. Arrives from the South early in April (12, 1874 [2, F. S. Osborn]; 7, 1875; 17, 1876 [15, de Nottbeck]; 16, 1877; 3, 1878; 10, 1879; 5, 1880), and departs late in autumn (October 25, 1874; 29, 1876; 23, 1877; November 29, 1879). Begins to lay about the middle of May (16, 1872; 17, 1873; 12, 1877. Each nest contained its full complement of eggs).

The Chipping Sparrow, like the Marsh Wren (*Telmatodytes palustris*) and some other species, has the habit of waking up in the night and singing. This has also been noted by John Burroughs, C. Hart Merriam, and other writers. Another occurrence, to which attention has also been repeatedly called, is a singular accident to which this species appears to be especially liable, viz.: the frequency with which it meets a tragic end, in consequence of having accidentally become inextricably entangled in the long hairs with which it lines its nest. Three instances of the occurrence of this accident have come under my own observation. The last was shown me by Miss Anna B. Warner, of Constitution Island, in which case the bird was completely netted in the horsehair, which was wound about its wings in the most intricate manner. In the other cases the birds were found suspended from their nests by a single hair, which encircled their necks. In one case the male bird attracted my attention by its repeated cries of distress; and I found the female suspended in the manner indicated, in which condition it had evidently remained for a day or two, as it was very putrid.

Dimensions.—Average measurements of eleven specimens: length, 5·37; stretch, 8·73; wing, 2·74; tail, 2·29; culmen, ·36; tarsus, ·64.

85. *Spizella pusilla* (Wilson). FIELD SPARROW. An abundant summer resident, arriving in April (28, 1874; 21, 1875; 17, 1876; 26, 1879); begins to lay its eggs about the middle of May (16, 1876; 18, 1878). It has a very pleasant song.

Dimensions.—Average measurements of six specimens: length, 5·68; stretch, 8·14; wing, 2·50; tail, 2·55; culmen, ·40; gape, ·42; tarsus, ·74; middle toe, ·50; middle toe and its claw, ·65.

86. *Zonotrichia albicollis* (Gmelin). WHITE-THROATED SPARROW. A very abundant spring and fall migrant, arriving, in spring, towards the last of April, and remaining till late in May (5, 1873; April 22 to May 16, 1874; April 30 to May 23, 1875; April 22 to May 28, 1876; April 2 to May 22, 1877; April 27 to May 18, 1878; April 23 to about May 30, 1879; April 14 to May 25, 1880). It reaches us, in autumn, towards the end of September (30, 1874; 23, 1876; 23, 1878), and stays till about the middle of November. Dr. A. K. Fisher saw it at Sing Sing, on the Hudson, on December 1, 1878. It is a regular winter resident in the Central Park, New York City. Mr. Eugene P. Bicknell says,³ in an article read before the Linnaean Society of New York, and treating of some birds of Riverdale, on the Hudson: "A flock of white-throated sparrows (*Zonotrichia albicollis*), have been about the place all winter, coming to roost in the evening, among some large spruce trees close to the house. A few others have

³ "The Country," Vol. 1, No. 23, p. 324, March 30, 1878.

wintered here, but I have failed to find them except in the vicinity of private residences where an abundance of evergreens afford them a suitable shelter."

Dimensions.—Average measurements of eighteen specimens: length, 6·74; stretch, 9·46; wing, 2·89; tail, 2·86; culmen, ·50; gape, ·54; tarsus, ·90; middle toe, ·66; middle toe and its claw, ·88.

87. Zonotrichia leucophrys (Forster). WHITE-CROWNED SPARROW. A rather rare spring and fall migrant. Observed from May 18 (1877) to 23 (1876). Mr. Thomas W. Wilson has taken specimens, at Cold Spring, on the Hudson, on October 12 and 16, 1875, and May 12, 1876.

Dimensions.—Average measurements of two adult females (Nos. 1,177 and 1,181, Highland Falls, N. Y., May 23, 1876, E. A. M.): length, 6·88; stretch, 9·82; wing, 3·03; tail, 2·88; culmen, ·50; tarsus, ·85; middle toe and its claw, ·81.

88. Passer domesticus (Linné). EUROPEAN HOUSE SPARROW. *Introduced.* Resident; breeds. It is a pest, here, as everywhere. All intelligent landholders shoot it whenever it appears on their premises. The grape-growers are especially vindictive against it. My gardener complains that it destroys his green peas.

During winter, the English Sparrows frequent the marshes along the Hudson, in large flocks; but, in general, they make their homes in the towns, whence they sally forth to depredate in the country around; but to return to the protection of their city homes at the slightest alarm.

Mr. William Church Osborn furnishes the following interesting observation on its habits: "An adult male Yellow-bellied Woodpecker (*Sphyrapicus varius*) was taken dead, in a back yard on 36th-street, New York City. It was overcome, after a stout resistance, by the united attack of a number (twenty-two were counted that engaged in the affair) of English Sparrows, one of their number having been left dead upon the field along with the luckless Woodpecker."

Dimensions.—Average measurements of fifteen specimens: length, 6·33; stretch, 9·72; wing, 3·01; tail, 2·30; culmen, ·50; gape, ·60; tarsus, ·76; middle toe, ·63; its claw, ·21.

89. Passerella iliaca (Merrem). FOX SPARROW. An abundant spring and fall migrant. In spring, arrives early in March, and stays till about the middle of April (March, 25, 1871; 21, 1873; 5 to April 30, 1874; 16 to April 28, 1875; 6 to April 14, 1876; 23 to April 2, 1877; February 28 to April 4, 1878; March 12 to April 10, 1879; March 6 to April 8, 1880). In autumn, arrives towards the end of October, and stays till about the first of December (October 22 to November 25, 1874; October 28, 1876; November 9 to December 8, 1877; October 26, 1878; October 26 to November 30, 1879).

This handsome species is the largest of our Sparrows, and the first

strictly migratory species to appear in spring. It begins to sing soon after its arrival. Its notes are full and rich; and, when singing, it is apt to be perched on a tree-top, although it frequently sings in a brush-heap. Its ordinary note is a low *tweet*, sometimes modulated so as to resemble the Cedar-bird's note; and it also gives a sharp, metallic utterance like the Brown Thrasher's (*Harpornynchus rufus*). Its flight is accompanied by a loud whirring sound.

Dimensions.—Average measurements of twenty-three specimens: length, 7·26; stretch, 11·14; wing, 3·39; tail, 2·85; culmen, ·50; gape, ·57; tarsus, ·96; middle toe, ·64; its claw, ·31.

90. Zamelodia ludoviciana (Linné). ROSE-BREASTED GROSBEAK. A summer resident; breeds. Most abundant during its migrations. Arrives early in May (13, 1873; 9, 1874; 13, 1875; 11, 1876; 16, 1877; 9, 1878; 10, 1879; 4, 1880), and stays through September (21, 1874).

This lovely bird is found in the open woods; but it also resorts to fields and orchards in the springtime. Its black-and-white colors remind one strongly of the Bobolink; but, besides, its folded wing conceals the rose-colored lining in the male, and yellow in his plainer-clad mate; and,—most conspicuous,—a patch of brightest carmine adorns the breast of the male. The Rose-breasted Grosbeak destroys the fruit-blossoms in the orchards, being especially fond of those of the cherry; and I suppose that it really does some damage to the crops; this, to my mind, however, it more than compensates for, by adding so much brightness and melody to the happiest of seasons. But it has another bad habit: where fields, newly sown with the cereal grains, are convenient to its woodland retreats—for it is a shy bird—its species will collect in large flocks, and resort there continually, as long as there is a grain of seed to be had.

Dimensions.—Average measurements of sixteen specimens:—length, 8·12; stretch, 12·92; wing, 4·02; tail, 2·99; culmen, ·69; gape, ·76; tarsus, ·88; middle toe, ·64; its claw, ·27; middle toe and its claw, ·83.

91. Passerina cyanea (Linné). INDIGO BIRD. A common summer resident; breeds abundantly. Arrives early in May (10, 1872; 13, 1873; 12, 1874; 12, 1875; 20, 1876; 14, 1877; 4, 1878; 15, 1879; 7, 1880), and departs in September (20, 1876; 19, 1879).

These pretty birds are common in neglected fields, and in the edge of the woods. I have known them to dwell, and rear their young, in the densest swamps of the wilderness, but this is quite exceptional, and they are rarely seen away from civilized parts. Their nests are built in bushes—commonly in blackberries growing along fences, or even in gardens of cultivated raspberries. Their song is very clear and fine. They pillage the grain-fields in company with the Purple Finch and Rose-breasted Grosbeaks. In autumn, associated in im-

mense flocks, they are seen feeding with the Blackbirds and Reedbirds upon the salt marshes along the Hudson, when it is interesting to observe the various transitional phases of their plumage, so well exhibited by an abundance of differing individuals.

Dimensions.—Average measurements of sixteen specimens: length, 5·59; stretch, 8·52; wing, 2·58; tail, 2·11; culmen, ·41; gape, ·45; tarsus, ·67; middle toe, ·49; its claw, ·19.

92. *Cardinalis virginianus* (Brissot). CARDINAL GROSBEAK; VIRGINIA REDBIRD. A bird flew close past me down a ravine in the woods, on May 11, 1876. It uttered a note which I distinctly remember; it must have been a Cardinal Grosbeak, though I was not then certain about its identity, thinking it might be the Summer Tanager (*Pyranga aestiva*).

93. *Pipilo erythrophthalmus* (Linné). GROUND ROBIN; MARSH ROBIN; TOWHEE BUNTING; CHEWINK. An abundant summer resident; breeds. Arrives the last of April (27, 1872; May 8, 1873; May 7, 1874; April 30, 1875; April 25, 1876; May 5, 1877; April 26, 1878; April 27, 1879; April 28, 1880), and stays till late in autumn (October 15, 1874; 11, 1875, Wilson, at Cold Spring; 25, 1876 [one that had been disabled was captured on the 28th]).

Dimensions.—Average measurements of seventeen specimens:—length, 8·35; stretch, 11·14; wing, 3·34; tail, 3·68; culmen, ·55; gape, ·71; tarsus, 1·09; middle toe, ·73; its claw, ·30; middle toe and its claw, 1·00.

Family, ICTERIDÆ.

94. *Dolichonyx oryzivorus* (Linné). BOBOLINK; REED-BIRD; RICE-BIRD. A summer resident; breeds. Arrives early in May (12, 1873; 21, 1875; 23, 1876; 22, 1877; 5, 1878), and stays till about the end of September (10, 1874; 22, 1876; 18, 1879). Not a very abundant summer resident; but occurs in large flocks during August and September, feeding upon the salt marshes along the Hudson.

Dimensions.—Average measurements of eight males:—length, 7·55; stretch, 11·95; wing, 3·76; tail, 2·73; culmen, ·60; tarsus, 1·10; middle toe and its claw, 1·06. Female:—length, 7·15; stretch, 11·25; wing, 3·54; tail, 2·53; culmen, ·58; gape, ·61; tarsus, 1·07.

95. *Molothrus ater* (Gmelin). COW-BIRD; COW-BLACKBIRD. A common summer resident; breeds abundantly. Arrives about the first of April (29, 1873; 18, 1874 [Frederic S. Osborn, at Garrisons]; 29, 1875; 17, 1876; 13, 1877; March 30, 1878; April 5, 1879; April 10, 1880), and disappears in August.

On Long Island, and in the vicinity of New York, Cow-birds spend the winter; but they have not been seen in the Highlands at that season. Mr. Jas. S. Buchanan took a perfect albino, at Newburgh,

on the Hudson. Cow-Blackbirds come to us in abundance early in April, and may then be seen running swiftly and gracefully about,—not hopping,—and picking up seeds in newly-planted fields. They are reproductive parasites, as well as polygamists. One of their eggs was hatched by the European House Sparrows, in Highland Falls, N. Y.; the young Cow-bird thrived, and remained with the Sparrows in the town for some time, and it was a common sight to see them feeding it in the street. Their amours are conducted in an amusing manner. The sexes associate indiscriminately, and in varying proportions. The males, in green-black and chocolate-brown dress, commence the performance by walking about with their necks arched, and decurved, so that their bills nearly touch the ground; then a male approaches one of the females,—which are considerably smaller, and brownish in color,—running at full speed, and, when close to her, pitches forward till his bill nearly touches the ground: this as if in salutation. The different males repeat this movement, and the more ardent ones ruff up all their feathers, and drag their expanded tails upon the ground, as they strut up to the side of their favorites, with skins inflated to an indefinite and alarming extent by the amorous passions within; meanwhile they utter various uncouth guttural noises, some of which resemble the loud, "cork-drawing" notes of the *Corvidæ*, while others are precisely like the sounds produced by tilting a partly empty cask. The females pay little attention, fill their crops, and utter an occasional note resembling that of the Cedarbird (*Ampelis cedrorum*).

Dimensions.—Average measurements of eleven males: length, 7·92; stretch, 13·57; wing, 4·24; tail, 3·01; culmen, .67; gape, .68; tarsus, 1·02; middle toe, .72; middle toe and its claw, .94; claw alone, .25. Average measurements of five females: length, 7·18; stretch, 12·22; wing, 3·84; tail, 2·68; culmen, .61; gape, .63; tarsus, .94; middle toe, .64; middle toe and its claw, .94; claw alone, .26.

96. *Agelæus phœniceus* (Linné). RED-WINGED BLACKBIRD; MARSH BLACKBIRD. A common summer resident; breeds. Arrives about the beginning of March (first seen March 25, 1871; April 2, 1872; March 31, 1873; April 25, 1874; March 18, 1875; 6, 1876, Thomas W. Wilson; April 7, 1877; March 27, 1878; 29, 1879; 28, 1880), and departs before December (last seen November 17, 1877).

Dimensions.—Average measurements of twenty-two males; length, 9·51; stretch, 15·23; wing, 4·72; tail, 3·77; culmen, .93, gape, .97; tarsus, 1·11; middle toe, .77; middle toe and its claw, 1·05. Average measurements of eight females: length, 7·74; stretch, 12·56; wing, 3·92; tail, 3·01; culmen, .74; tarsus, 1·01.

97. *Sturnella magna* (Linné). MEADOW-LARK; FIELD-LARK. A resident species; but only occasional, and never abundant, in win-

ter; breeds in favorable situations. The migrants arrive, or pass through, in March (April 10, 1873; 2, 1877; March 30, 1878; April 5, 1879; April 6, 1880).

Dimensions.—Average measurements of four males: length, 10·75; stretch, 16·53; wing, 4·76; tail, 3·16; culmen, 1·35; gape, 1·45; tarsus, 1·72; middle toe, 1·15; middle toe and its claw, 1·53; claw alone, .35. Female: length, 9·57; stretch, 14·86; wing, 4·22; tail, 2·75; culmen, 1·30; gape, 1·35; tarsus, 1·60; middle toe, 1·17; its claw, .40.

98. Icterus spurius (*Linné*). ORCHARD ORIOLE. A common summer resident; breeds. Arrives early in May (9, 1872; 19, 1873; 13, 1874; 9, 1875; 7, 1876 [5, de Nottbeck, at Fishkill]; 15, 1877; 12, 1878; 8, 1879; 3, 1880), and remains till late in September (17, 1874).

Dimensions.—Average measurements of eleven males: length, 7·32; stretch, 10·34; wing, 3·18; tail, 2·92; culmen, .65; gape, .74; tarsus, .88; middle toe, .58; its claw, .26.

99. Icterus galbula (*Linné*, 1758). BALTIMORE ORIOLE. An abundant summer resident; breeds plentifully. Arrives early in May (9, 1872; 11, 1873; 9, 1874; 9, 1875; 7, 1876; 13, 1877; 3, 1878; 6, 1879; 2, 1880), and departs early in September (22, 1874.) In a nest of unusually large size, found in a pear-tree near my house by Louis A. Zerega, in June, 1874, there were no less than eight eggs.

Dimensions.—Average measurements of twenty-three specimens: length, 7·53; stretch, 11·72; wing, 3·52; tail, 2·84; culmen, .70; tarsus, .85.

100. Scolecophagus ferrugineus (*Gmelin*). RUSTY GRACKLE. A common spring and fall migrant. Arrives from the South early in March (30, 1873; 19, 1874; 17, 1875; 14, 1876; April 5, 1879; March 11, 1880), and all pass through before the end of May. Returning in autumn; they are found from September until December.

Dimensions.—Average measurements of ten specimens: length, 9·55; stretch, 14·60; wing, 4·61; tail, 3·52; culmen, .91; tarsus, 1·06; middle toe and its claw, .75.

101. Quiscalus purpureus (*Linné*). PURPLE GRACKLE; CROW BLACKBIRD. A spring and fall migrant. I do not know that any breed in the Highlands; but numbers do so about Newburgh, and Fishkill-on-the-Hudson, just above the Highlands; and the species nests plentifully lower down the river. It arrives in March (11, 1871; 6, 1874; February 29, 1877, Fishkill, de Nottbeck; March 8, 1878; 12, 1879). In autumn, it remains till November.

In the mountains, Crow Blackbirds are quite uncommon, although they are abundant on both sides of us. In Orange County, I have observed them in the greatest numbers. On the first of May last, I took the stage at Newburgh, for Cornwall. The bridge at Moodna Creek was being repaired, so the coach proceeded *via* Vail's Gate.

On the way, were seen large numbers of Grackles, of varieties *pureus* et *aeneus*. The stage was a horribly rickety, old rattletrap, which still bore some slight vestiges of the conventional yellow color with which it had originally been decorated; on its top were piled some long, crooked, heavy iron rods, which rattled dangerously overhead. This splendid vehicle was drawn by two lean and ghostly horses, whose best days were passed a decade or more ago; as the driver whipped them up the long hills, I could not help feeling that I was doing violence to my humanity by sitting on the driver's seat instead of getting out and helping the horses pull, as my conscience told me I ought to be doing. The roads and fences were lined with sturdy, old cedars, and, in these, the grackles were ensconced. As we drove past, almost brushing the branches, they hopped down close to us, leered at our bony nags, peered into the coach and screamed derisively at us, and spread their tails in high glee as they called to their neighbors in advance to join in the merriment at our expense, and they in turn jeered us as we passed by. I could not help feeling ashamed, and, involuntarily, turned to see if our red-nosed driver shared my emotions. The Crow Blackbirds were scattered over the fields on both sides of the road. The bronzed variety shone like gold in the sunlight, while the purple ones glittered brilliantly in their metallic plumage.

I have never known them to breed in the mountains; but in all the low-lying meadow-country along the Hudson, they do so abundantly — especially where coniferous trees abound.

Dimensions.— Average measurements of adult male: length, 12·50; stretch, 17·75; wing, 5·55; tail, 5·40; culmen, 1·17; gape, 1·35; tarsus, 1·45; middle toe, 1·00; its claw, ·34.

A LIST
OF THE
BIRDS OF HUDSON HIGHLANDS,
WITH ANNOTATIONS.

PART VI.

BY EDGAR A. MEARNs.

[From the BULLETIN OF THE ESSEX INSTITUTE, Vol. XII, 109-128.]

A List of the Birds of the Hudson Highlands, with Annotations.

BY EDGAR A. MEARNs.

[Continued from page 25, Vol. XII.]

Family, CORVIDÆ.

102. *Corvus frugivorus* (*Bartram*). COMMON CROW. A permanent resident; breeds.

Crows are partially migratory; and whether those that breed here are permanent residents, or are replaced in winter by individuals which breed farther north, is a mooted question; the latter hypothesis seems most probable, however. There is a regular spring and fall migration, when they move in immense flocks. On the evening of December 5, 1876, I saw a flock that almost rivalled an historic flock of Wild Pigeons. The Crows were flying southward, and settling in an evergreen wood beside the Hudson. I immediately started towards the spot, and, as I neared it, they all arose. The flock that I saw alight at first was but a small fraction of the entire number that then rose into the air; there were thousands of them. Save the loud, rushing sound produced by their flight, which sounded like the roar of a large waterfall, they were nearly silent. As they circled overhead, a few caws, like words of command from chosen officers, were heard; but the rank and file uttered no sound. Soon they alighted again in a deciduous forest not far distant, only to be again alarmed at something and take to flight; but they finally settled near the same place for the night, without a caw or a wing-flap to indicate the whereabouts of that sable army of usually garrulous birds. These migratory flocks begin to appear in October, and continue until the commencement of winter. In February, flocks are seen passing northward.

There is a mountain in the Highlands, on the east side of the Hudson, where, late in summer, thousands of Crows come nightly to roost in the cedars; all come from the east, and I do not think that any of our resident Crows join their camp.

Crows are expert fishers. In winter, they watch at the fissures in the ice along shore, at low tide, and claw out whatever fishes are passing. I have known two Crows to capture upwards of twenty good-sized gold fishes (*Crassius auratus*) in less than an hour's time.

Crows usually begin to build early in April. Mating begins in March, when they are more noisy and less shy, than at other times. The eggs, as a rule, are deposited from the middle of April to the middle of May. A nest was found on April 14, 1873, containing six eggs; another on May 24, 1873, with four fresh eggs. Their complement varies from four to seven. The old birds are very assiduous in the care of their young; the latter make a great outcry while being fed; the mother may often be seen flying in circles about the nest, talking to the little ones, and modulating her voice whimsically.

Crows eat the eggs of other birds. I caught one in the act of destroying those of the Night Heron (*Nyctiardea grisea nævia*). He came silently and stealthily into the swamp, but my shot cut short his rapacious career just as he was about to indulge his glutinous appetite at such great cost to the poor Herons, and he tumbled ingloriously into the mud.

Dimensions.—Average measurements of six males: length, 19·30; stretch, 37·70; wing, 12·18; tail, 7·52; culmen, 1·92; gape, 2·22; tarsus, 2·40; middle toe, 1·51; middle toe and its claw, 1·98. Average measurements of six females: length, 18·60; stretch, 36·05; wing, 11·82; tail, 7·12; culmen, 1·76; gape, 2·02; tarsus, 2·28; middle toe, 1·38; middle toe and its claw, 1·85. Measurements of largest male (No. 234, ♂ ad., October 8, 1874, Highland Falls, N. Y., E. A. M.): length, 19·75; stretch, 39·00; wing, 13·31; tail, 8·06; culmen, 1·96; gape, 2·26; tarsus, 2·40; middle toe and its claw, 1·98. Measurements of smallest female (No. 2,011, ♀ ad., March 13, 1880, Highland Falls, N. Y., E. A. M.): length, 18·10; stretch, 34·50; wing, 10·85; tail, 6·85; culmen, 1·73; gape, 1·98; tarsus, 2·27; middle toe and its claw, 1·80.

103. *Corvus ossifragus* (Wilson). FISH CROW. Occasional upon the Hudson River. Observed from Riverdale to Cornwall.

I recorded its capture at Highland Falls, in the Bulletin of the Nuttall Ornithological Club (Vol. III, No. 1, pp. 45–46, for January, 1878), on the 7th of May, 1877, when I shot a female specimen. I have come across but one other Fish Crow on the Hudson River. On May 1, 1880, at Cornwall, I heard a note several times repeated, which I recognized as that of the Fish Crow. Afterwards, one flew towards me and passed quite near, so that I had a distinct view of it; its note, at the same time, was unmistakable, but I had no gun with me to make assurance doubly sure.

Mr. Eugene P. Bicknell, the only other observer who has noted this Crow upon our river, writes as follows:¹ “As will be seen from the following remarks, there is no doubt that a pair of these birds have

¹ Bulletin of the Nuttall Ornithological Club, Vol. III, No. 3, p. 131, July, 1878.

been in the vicinity during the past season. I first noticed them on February 24, being attracted by their small size, and for several weeks thereafter they were often seen, their peculiarities of note and habit at once distinguishing them from the common Crow. Their favorite resort seems to be a growth of tall and partially decayed locusts bordering a fresh-water pond, and on two of these trees standing together, somewhat apart from the others, the birds were to be found almost every morning, but, owing to their shyness and the openness of the ground, I was unable to approach within gunshot. In alighting, they usually chose the very topmost branches of the trees, and when approached manifested their suspicion by a restless and excited motion of the wings, which appeared to be more pointed than in the more stoutly built *C. Americanus*. Their note was an abrupt, expressionless croak, usually delivered singly and at regular intervals. Though other Crows were often seen in the vicinity, this pair kept aloof by themselves, and several times I saw them chased by a clamorous party of their larger relatives. Latterly, they have been rarely noticed, and then always singly, thus indicating that they are breeding in the vicinity."

In 1844, De Kay first gave the Fish Crows as inhabitants of New York State, observing² that "they are occasionally seen on the shores of Long Island, but are generally confounded with the Common Crow." His statement was not, until quite recently, fully substantiated, and has been quite generally discredited by writers. Mr. Clarence H. Eagle set the matter at rest, however, by publishing (in the Bulletin of the Nuttall Ornithological Club, Vol. III, No. 1, p. 47, for January, 1878) the following notice of its capture: "On the 17th of July, 1873, I shot a fine female of this species near Rockaway, L. I. The bird was flying around, but kept apart from a flock of Common Crows in the vicinity." Mr. Theodore Roosevelt furnished the next record of its capture on Long Island (Notes on some of the Birds of Oyster Bay, L. I., March, 1879). He says: "Dec. 30, 1874, I shot a male. There was then a good deal of snow on the ground. It was by itself, although the Common Crows were assembled in great flocks." Messrs. Louis A. Zerega and H. A. Purdie (see Bulletin N. O. C., Vol. V, No. 4, pp. 205 to 208, and 240, October, 1880) have recently thrown much light upon the northern distribution of this species, and it is now established to be a regularly breeding summer resident on Staten Island, where Mr. H. A. Wheeler has observed it from March to November, and observes that during the past five years he has always found it breeding on Staten Island, but seldom finds more than half a dozen nests in a season, if as many as that.

² New York Zoölogy, Part II, p. 135, 1844.

Mr. De L. Berier does not regard it as rare on Long Island. Mr. Zerega has found it to be a common permanent resident along the shore of Sandy Hook Bay and at Seabright, N. J., and infers that it breeds in those places.

I found a large flock of Fish Crows near Garden City, Long Island, N. Y., on October 29, 1880. There were others straggling about, but not associating with the Common Crows, which were also abundant.

Dimensions.—Measurements of No. 1,360, ♀ ad., May 7, 1876, Highland Falls, N. Y., E. A. M.: length, 16·00; stretch, 33·20; wing, 10·84; tail, 6·20; culmen, 1·37; gape, 1·65; tarsus, 1·85; middle toe, 1·30; its claw, ·47.

104. *Cyanocitta cristata* (Linné). BLUE JAY. A permanent resident; breeds. Large flocks move north in spring, and south in autumn.

Dimensions.—Average measurements of fourteen specimens: length, 11·74; stretch, 16·77; wing, 5·14; tail, 5·19; culmen, 1·09; gape, 1·20; bill from nostril, ·71; tarsus, 1·39; middle toe, ·79; its claw, 36. Average of eight males: length, 11·92; stretch, 16·96; wing, 5·23; tail, 5·27; culmen, 1·08; gape, 1·19; bill from nostril, ·70; tarsus, 1·45. Average of six females: length, 11·63; stretch, 16·66; wing, 5·08; tail, 5·14; culmen, 1·09; gape, 1·21; bill from nostril, ·72; tarsus, 1·38; middle toe, ·79; its claw, ·36.

Family, TYRANNIDÆ.

105. *Tyrannus carolinensis* (Linné). KINGBIRD; BEE-MARTIN. A common summer resident; breeds. Arrives during the first half of May (4, 1872; 14, 1873; 11, 1874; 9, 1875; 8, 1876; 13, 1877; 1, 1878; 9, 1879; 8, 1880), and remains until September.

Dimensions.—Average measurements of eleven specimens: length, 8·51; stretch, 14·61; wing, 4·64; tail, 3·55; culmen, ·74; bill from nostril, ·55; gape, ·98; tarsus, ·75; middle toe, ·57; its claw, ·28.

106. *Myiarchus crinitus* (Linné). GREAT-CRESTED FLYCATCHER. A common migrant, and rather abundant summer resident; breeds. Arrives in May (22, 1874, 16, 1875; 13, 1876; 23, 1877; 3, 1878; 9, 1879; 8, 1880), and stays till about the end of September (24, 1873; 19, 1875).

Great-crested Flycatchers are extremely pugnacious. I once shot one that was fighting with another of its species, and seemed to be a veteran warrior, for his rectrices were reduced to a single one, while his general appearance reminded me of that of a dissipated tom-cat. My shot only wounded it, and it flew upwards in a spiral, and then slowly descended to the ground in the same manner, screaming and snapping its bill, the whole distance. When I started to secure it, it

flew directly at me, biting, snapping its bill, and uttering piercing screams.

Dimensions.—Average measurements of six specimens: length, 9·01; stretch, 13·49; wing, 4·14; tail, 3·75; bill from nostril, ·62; culmen, ·77; gape, 1·09; tarsus, ·84; middle toe, ·50; its claw, ·26.

107. *Sayornis fuscus* (*Gmelin*). PHOEBE-BIRD; PEWEE FLY-CATCHER. A common summer resident; breeds. Arrives early in March (17, 1871; 26, 1872; 19, 1873; 21, 1874; 29, 1875; 28, 1876 [26, de Nottebeck at Fishkill]; 26, 1877; 13, 1878; 13, 1879; 2, 1880), and remains until about the first of November (October 15, 1874; 23, 1876; 26, 1879). I have found its nest completed by April 10 (1880). In 1878, its full complement of eggs was laid April 20, and the first egg of their second brood was deposited on May 20th. A pair for several years built their nest in a shaft of an iron mine, in a dark and extremely humid situation; this nest contained no less than six eggs, on May 3, 1880.

Dimensions.—Average measurements of fourteen specimens: length, 6·99; stretch, 11·03; wing, 3·38; tail, 2·89; bill from nostril, ·41; culmen, ·60; gape, ·75; tarsus, ·67; middle toe and its claw, ·59; toe alone, ·40.

108. *Contopus borealis* (*Swainson*). OLIVE-SIDED FLYCATCHER. A common spring and fall migrant. Arrives late in May, and passes through before June (May 25 to 28, 1876; 25 to 29, 1877; 16 to 25, 1878; 9, 1879); seen in autumn from the 27th of August to the 18th of September (August 27 to September 18, 1875; September 5 to 15, 1876; September 1, 1879).

I first saw the Olive-sided Flycatcher in September, 1872, when I surprised several of them that were engaged in their favorite pastime of plucking each other in mid-air, amidst a din of screams and vituperations, and settled their quarrel by summarily disposing of two of the belligerents in my basket. Since then, I have found it nearly every spring and autumn, and frequently, during the latter season, in considerable numbers. In spring, when it is rather scarce, it is usually seen singly, or in pairs, perched upon a dry limb on top of some tall tree, sitting remarkably erect, with its crest raised. It is frequently very wild, and hard to shoot.

Dimensions.—Average measurements of five specimens: length, 7·39; stretch, 12·68; wing, 4·05; tail, 2·70; bill from nostril, ·54; gape, ·97; tarsus, ·60; middle toe, ·46; middle toe and its claw, ·70.

109. *Contopus virens* (*Linné*). WOOD PEWEE. A common summer resident; breeds. Arrives from the South about the middle of May (12, 1873; 12, 1874; 11, 1875; 19, 1876; 17, 1877; 20, 1878; 14, 1879; 13, 1880), and takes its departure late in September (21, 1874; 14, 1876; 11, 1880).

Dimensions.—Average measurements of eight specimens: length, 6·53; stretch, 10·61; wing, 3·34; tail, 2·62; bill from nostril, ·42; culmen, ·65; gape, ·83; tarsus, ·50; middle toe, ·32; middle toe and its claw, ·48.

110. *Empidonax pusillus traillii* (Audubon). TRAILL'S FLYCATCHER. A rather uncommon spring and fall migrant, and occasional in summer; probably breeds.

This active, noisy species is usually present during the latter part of May (12 to 31, 1875; 22 to 28, 1876; 25, 1878; 13, 1880), and passes south in autumn. Messrs. Roosevelt and Minot found it summering in the Adirondacks, in Franklin County, N. Y.³ Dr. Thomas M. Brewer described its eggs (Proceedings of the United States National Museum, p. 4, April 29, 1879) taken in Catskill mountains, N. Y., by Dr. James C. Merrill.

Dimensions.—Average measurements of three adult males: length, 6·09; stretch, 9·36; wing, 2·87; tail, 2·33; bill from nostril, ·35; gape, ·70; tarsus, ·66; middle toe and its claw, ·58; toe alone, ·42.

111. *Empidonax minimus* (Baird). LEAST FLYCATCHER. A very common summer resident; breeds. Reaches us from the South about the beginning of May (15, 1874; 10, 1875; 8, 1876; 7, 1877; 2, 1878; April 29, 1879, 26, 1880), and departs during the last of September and first part of October (latest observation October 8, 1874).

Dimensions.—Average measurements of twelve specimens: length, 5·41; stretch, 8·15; wing, 2·51; tail, 2·21; bill from nostril, ·31; gape, ·65; tarsus, ·65; middle toe and its claw, ·49; toe alone, ·32.

112. *Empidonax flaviventris* (Baird). YELLOW-BELLIED FLYCATCHER. A common spring and fall migrant. Arrives early in May, and passes on before June (May 9, 1873; 31, 1875; 23 to 28, 1876; 17, 1877; 22, 1878; 14, 1879; 13, 1880). In autumn, passes south during September (latest observation September 28, 1875).

Dimensions.—Average measurements of seven specimens: length, 5·63; stretch, 8·70; wing, 2·65; tail, 2·16; tarsus, ·59.

Family, CAPRIMULGIDÆ.

113. *Caprimulgus vociferus* (Wilson). WHIPPOORWILL. A very common summer resident; breeds. Reaches us from the South about the beginning of May (April 23, 1872; May 6, 1873; 12, 1874; 10, 1875; 11, 1876; April 27, 1877; 24, 1878; May 4, 1879; April 22, 1880), and departs during September. My latest date is September 30, 1875, when I procured a female specimen. In 1878, its notes were heard during September, as late as the 23d. Its cry is not as

³The Summer Birds of the Adirondacks, in Franklin County, N. Y., No. "61," 1877.

frequently heard after the beginning of August, as during the early part of summer.

I append the following note from my journal: "May 14, 1877. This evening I approached a wall behind which a pair of Whippoorwills were crying; every minute they would fly out after insects, in small circles, immediately continuing their notes on settling again, so that scarcely any interruption was perceptible. Between each *whip-poor-will*, they uttered a cavernous *chuck* as usual, and then a low, guttural hollow *caw-ca-ca ca-ca — hic-hic-hic — ca-ca-tic*, etc. These ludicrous sounds, probably their love notes, were uttered in a low, hollow tone. I shot the male, at which the female flew close up to me, then removed a short distance, and commenced a loud *whip-poor-will* in seemingly a joyous tone; but this is probably their one way of expressing every strong emotion."

Dimensions.—Average measurements of seven specimens: length, 9·75; stretch, 18·60; wing, 6·08; tail, 4·65; culmen, .37; bill from nostril, .30; gape, 1·34; tarsus, .70; middle toe, .64; its claw, .24.

114. Chordeiles popetue (Vieillot). **NIGHTHAWK.** A rather common summer resident; breeds. Arrives towards the end of April (May 12, 1872; April 14, 1873; May 15, 1875; 18, 1877; April 27, 1878; 18, 1879; May 3, 1880), and departs late in September (October 3, 1874; September 15, 1875; 15, 1876). Large flocks pass through during migrations.

Dimensions.—Measurements of No. 681, ♀ ad., May 17, 1875, E. A. M.: length, 10·00; stretch, 24·00; wing, 7·88; tail, 4·80; culmen, .25; tarsus, .55.

Family, CYPSELIDÆ.

115. Chaetura pelagica (Linné). **CHIMNEY SWIFT;** "CHIMNEY SWALLOW." An abundant summer resident; breeds. Arrives about the end of April (28, 1872; May 6, 1873; 8, 1874; 3, 1875; 6, 1876; April 26, 1877; 28, 1878; May 4, 1879; April 27, 1880), and departs the last of September (30, 1877; 28, 1878; 29, 1879; 18, 1880).

Chimney Swifts begin to build during the last week of May, when they may be seen breaking off the small, dry twigs with which they build their nests, while on wing. The eggs are laid early in June. During migrations they associate in large flocks, roosting in some large, high chimney. They retire just at dusk, dropping down chimney very much as Rails settle into the grass.

Dimensions.—Average measurements of thirteen specimens: length, 5·43; stretch, 12·46; wing, 4·94; tail, 1·90; bill from nostril, .15; gape, .59; tarsus, .49; middle toe, .29; middle toe and its claw, .45; claw alone, .22.

Family, TROCHILIDÆ.

116. *Trochilus colubris*, (Linné). RUBY-THROATED HUMMING-BIRD. A common summer resident; breeds. Arrives early in May (2, 1872; 11, 1873; 10, 1874; 11, 1875; 6, 1876; 12, 1877; 4, 1878), and departs in September (29, 1874; 20, 1876; 25, 1880).

Our Humming-bird is fond of visiting the marshes along the Hudson. The bulrush-tops are sometimes used to line its nest with; and the flowers growing there are a great attraction. It is a very fierce little creature when angered. I have seen one attack a pair of Downy Woodpeckers upon the tree which it had chosen for its nest, and drive them off, exhibiting the utmost rage. Once I saw one dart furiously at a small red balloon which a boy was flying in a field. It often alights on telegraph wires.

Dimensions.—Average measurements of six specimens: length, 3·74; stretch, 4·12; wing, 1·54; tail, 1·15; culmen, .67; gape .80; tarsus, .18; middle toe and claw, .24.

Family, ALCEDINIDÆ.

117. *Ceryle alcyon* (Linné). BELTED KINGFISHER. A common summer resident; breeds. Arrives in March (26, 1872; 31, 1873; 18, 1874; April 2, 1875; 11, 1876; March 26, 1878; April 9, 1879; 5, 1880), and stays till late in November (4, 1874; 30, 1878). It probably occurs on the lower part of the river in winter.

Dimensions.—Average measurements of fourteen specimens: length, 13·02; stretch, 22·16; wing, 6·17; tail, 3·60; bill from nostril, 1·85; gape, 2·92; tarsus, .42; middle toe, .59; its claw, .38.

Family, CUCULIDÆ.

118. *Coccyzus erythrophthalmus* (Wilson). BLACK-BILLED CUCKOO. A very common summer resident; breeds plentifully. Arrives in May (13, 1874; 20, 1875; 20, 1876; 13, 1877; 4, 1878; 9, 1879; April 26, 1880), and stays through September (25, 1874; 16, 1879).

It begins nesting in May. The young are covered with curious-looking pin-feathers, which gives them an appearance like that of the wire swab used in gun-cleaning. The old bird is a close sitter, and, when obliged to leave its nest, moves off slowly upon the branches, with wings and tail spread. Sometimes it will come quite close to the observer, and then utter for several minutes a low, mournful *coo, coo, coo, coo*, and then an outpouring of harsh, loud notes that quickly bring the mate to its side, all the while keeping its wings and tail ex-

panded, and crouching low upon the branch. Its ordinary notes are quite commonly heard at night as well as during the day.

Dimensions.—Average measurements of nine specimens: length, 11·83; stretch, 16·55; wing, 5·50; tail, 6·26; bill from nostril, ·74; gape, 1·27; tarsus, 1·02; middle toe, ·79; middle toe and its claw, 1·06.

119. *Coccyzus americanus* (Linné). YELLOW-BILLED CUCKOO. A summer resident; breeds; much less numerous than the Black-billed Cuckoo. Arrives early in May (14, 1876; 6, 1878; 10, 1880), and stays until late in September (23, 1874).

Dimensions—Average measurements of four female specimens: length, 12·20; stretch, 17·04; wing, 5·70; tail, 6·20; bill from nostril, ·76; gape, 1·31; tarsns, 1·10.

Family, PICIDÆ.

120. *Picus villosus* (Linné). HAIRY WOODPECKER. A permanent resident; sometimes abundant; breeds, but not plentifully. A nest which I found on Consook Island, in the Hudson River, on May 5, 1878, was built in a natural cavity in a small tree, about four feet from the ground, and contrary to Hairy's usual habit, it was warmly built of grass and strips of bark, whereas the eggs are commonly deposited right on the chips, without any attempt at a nest. The entrance was through a knot-hole, and neither it nor the interior had been enlarged by the birds. The nest rested on a mass of decayed black muck at the bottom of the hole.

Dimensions.—Average measurements of twelve specimens: length, 9·40; stretch, 15·66; wing, 4·78; tail, 3·30; culmen, 1·22; bill from nostril, 1·00; gape, 1·32; tarsus, ·84; middle toe, ·57; its claw, ·40.

121. *Picus pubescens* (Linné). DOWNY WOODPECKER. A permanent resident; abundant; breeds.

The Downy Woodpeckers, though always abundant, are especially so during the first warm days of spring-time, when they become almost gregarious, and are apparently on the move northward. Their full complement of eggs is usually deposited during the first two weeks of May, although I have found their eggs as late as May 30 (1876).

Downy is a very active, industrious bird, and perhaps this is the reason why he experiences no special discomfort from cold during the bleak winter season. At night he is comfortably housed in a hole, which he digs expressly for that purpose. What a knowing cove he is! Always, so far as my experience goes, he places the entrance to his burrow so as to face the sunny south. Though Downy is a wanderer like the rest of his tribe, yet, whenever he takes a journey into a far

country, his first labor is to construct a home wherein to spend the cold, dark night. I have often watched him at work, and have found that he is apt to remain for several days in the vicinity of his burrow. Let me give a chapter of Downy's history, copied from my note-book: I first saw him at half-past four o'clock, on the afternoon of February 20, 1878. At that time he had burrowed a very little way into a pear-tree — just made a beginning — at a height of about four feet from the ground. When I returned, in less than a couple of hours, he had entirely disappeared from view, except when he came to the top of his mine, and dropped the chips which resulted from his labors down below. When I visited the place by daylight, I found a smoothly-finished cavity such as is used for the purpose of nidification, and the ground covered with chips, but no Downy was in sight. Shortly after sunset I again visited the nest, and found him snugly ensconced within the cavity, with his bill warmly tucked away amongst the feathers, which latter were ruffed up so as to look like a black and white ball, with a red-napped head tucked in the middle. While sleeping, his whole frame heaved at every breath, so profound was his slumber. I summoned a friend to come and see my Woodpecker: after watching him a while, our voices awoke him, when he flew swiftly out, and lit upon a pear-tree close by, whence, after a lapse of five minutes, during which time he remained perfectly motionless, he returned to the burrow.

March 1st, I visited Downy at 5.50 o'clock A. M., and found him still sleeping soundly, although the Bluebirds were already singing, and the Crows flying in flocks overhead. I waited for one hour to find out his time of rising. At 6.50 o'clock, I heard an admonitory tapping upon the inside of the tree — a waking-up process analogous to our bathing and dressing, doubtless. A moment later, his head appeared at the entrance to his burrow, whence, after a jerky salutation to the first sunrise of spring, he hied him forth to his day's toil. At first, he lit on a pear-tree near by, tapped sleepily at the branch, ascended to the top of it, looked curiously at me, and then took a long flight over into the woods, where I soon heard his loud notes. *Downy is not an early riser!* On March 3d, I made the following note: "This evening at half-past five o'clock, I visited the Downy Woodpecker, and found him sound asleep in his hole, clinging to the side of the cavity, with head thrown over to one side and nestling amongst the feathers, showing conspicuously the crimson feathers of the nape. The feathers of the breast were deeply creased down the middle. As my warm breath reached him, his chest stopped heaving, and, with a swiftness that was astonishing as contrasted with his previous deep slumber, he threw out his neck and head, but, as I instantly retired, he did not leave the burrow, nor, probably, find out

what had awakened him. He retires to the burrow every evening at sunset, or sooner. On March 6th, I noted: "A female Bluebird was worrying and making a great disturbance about the Downy's hole, which she, apparently, had occupied during the day, but which he had again appropriated to sleep in. All of the Snowbirds in the neighborhood had assembled, and were contributing to the fracas all that they were able in the way of din; meanwhile, *Picus* looked out of the circular entrance to his house, collected and calm, but flew away at my approach to the woods and did not return till late.

Dimensions.—Average measurements of twenty-nine specimens: length, 6·83; stretch, 11·98; wing, 3·70; tail, 2·53; culmen, ·68; gape, ·79; tarsus, ·65; middle toe and its claw, ·60.

122. *Sphyrapicus varius* (Linné). YELLOW-BELLIED WOOD-PECKER. Resident, except during the summer months; abundant during spring and fall migrations, but rarer in winter.

This handsome Woodpecker is frequently seen in our forests and orchards. Like most of its family, it possesses a variety of notes, one of which resembles the common cry of the Blue Jay. Mr. Peter de Nottbeck informed me that he has frequently found it during autumn, eating the corn in the fields; it was while thus feeding that he usually secured his specimens. Early in October, 1880, I saw these birds migrating along the beach, at Great South Bay, Long Island, in large numbers. Sometimes they lit on the low pines, or even on the ground. They were passing westward in straggling flocks which were almost constantly in view.

Dimensions.—Average measurements of nineteen specimens: length, 8·56; stretch, 15·37; wing, 4·87; tail, 3·20; culmen, ·92; gape, 1·07; tarsus, ·78; middle toe and its claw, ·85.

123. *Centurus carolinus* (Linné). RED-BELLIED WOODPECKER. Occasionally found in summer. I recorded (in the Bulletin of the Nuttall Club, Vol. III, No. 3, p. 146, 1878) the capture of a specimen at Cornwall, on the Hudson, in September, 1870. A second specimen was shot at Cold Spring, on the Hudson, by Mr. Francis Butterfass.

124. *Melanerpes erythrocephalus* (Linné). RED-HEADED WOODPECKER. Occurs during spring and fall, and more rarely in winter. Not known to breed in the Highlands, but breeds commonly a little to the west of them. Occasionally, the young are quite numerous in autumn; but the species is rarely met with at other seasons.

Dimensions.—Average measurements of nine specimens: length, 9·75; stretch, 17·90; wing, 5·52; tail, 3·30; culmen, 1·17; gape, 1·37; tarsus, ·87; middle toe, ·72; its claw, ·39.

125. *Colaptes auratus* (Linné). GOLDEN-WINGED WOODPECKER. FLICKER; HIGH-HOLE. A permanent resident, but of irregular occurrence, and generally rare in winter; breeds plentifully. Arrives in

full force during March; has its first brood on wing by the middle of June; departs before December, excepting those which spend the winter north.

Dimensions.—Average measurements of fifteen specimens: length, 12·60; stretch, 20·75; wing, 6·25; tail, 4·63; culmen, 1·42; gape, 1·57; tarsus, 1·14; middle toe, .87; middle toe and its claw, 1·27.

Family, STRIGIDÆ.

126. *Bubo virginianus* (*Gmelin*). GREAT HORNED OWL; "Hoot Owl." A permanent resident; breeds. Have heard its notes at mid-day, in cloudy weather.

Dimensions.—Average measurements of two male specimens: length, 21·44; stretch, 53·88; wing, 14·48; tail, 8·63; culmen, measured from frontal feathers, 1·55; from cere, 1·10; tarsus (about), 2·30; middle toe, 2·00; its claw, 1·12.

127. *Scops asio* (*Linné*). SCREECH OWL; MOTTLED OWL. A permanent resident; abundant; breeds.

On May 30, 1875, I found a Screech Owl's nest in the hollow hole of a buttonwood-tree, about fifteen feet from the ground. On thrusting my hand into the cavity, it was instantly seized by the old bird, which I drew out of the hole and flung away from me with the utmost dispatch, without reflecting that I was allowing an interesting specimen to escape; but I removed one of the younglings, and afterward captured both of the parents, which were in the gray plumage, as were their three young. Two of the young were kept all summer as pets, and were allowed perfect freedom; towards autumn they left the place, but one of them was found in the woods and brought back, but soon left us again; they were never heard of afterwards. The parent birds were shot at night. On my first nocturnal visit, both birds flew close about my ears, and uttered a curious, deep, guttural sound, like one of the notes of the Black-billed Cuckoo (*Coccyzus erythrophthalmus*); sometimes they darted with great swiftness close to my head, and snapped their bills sharply as they passed. I killed the female, and shot the male on the following night, when I was assailed in the same manner as on the previous evening.

On the following season, a pair of Golden-winged Woodpeckers (*Colaptes auratus*) took possession of the owl-tree, and held it until the spring of 1879, when I was again attacked by a pair of Screech Owls, when walking past the tree one dark night. On examination, a single young bird, and an addled egg, were found in the tree; the latter was, of course, appropriated on the spot. The old birds snapped their bills as usual, but also uttered an indescribable cry which was new to me. A few days later, I visited the nest in the day-

time, and captured the female in the hole along with the young one. After a prolonged search, the male was descried sitting in the crotch of a white-oak tree, in the midst of a clump of branchlets; his "ears" were very conspicuous, and his neck fully extended, as he attempted to obtain a better view of me. Both parents were red; but the young one was gray, like those obtained from the same tree four years previously.

The red, and gray-plumaged birds are about equally numerous. Some specimens are intermediate.

Dimensions.—Average measurements of nine specimens: length, 9·40; stretch, 23·61; wing, 6·40; tail, 3·09; culmen, .63; gape, .98; tarsus, 1·54; middle toe, 1·80; its claw, .48.

128. *Asio americanus* (Stephens). AMERICAN LONG-EARED OWL. A permanent resident; breeds. Mr. Francis Butterfass informed me that it was abundant about Cold Spring, where he often shot specimens. It breeds on Constitution Island, where I surprised a family of young ones, accompanied by their parents. It was at mid-day; the Owls sat in a group, with necks elongated, and ears erect. The sun shone bright, but, when disturbed, they flew without apparent inconvenience.

Dimensions.—Measurements of No. 2,021, ♂ ad. April 9, 1880, Constitution Island, Hudson River, N. Y., E. A. M.: length, 14·30; stretch, 36·00; wing, 11·00; tail, 6·00; culmen measured from frontal feathers, 1·06; bill from nostril, .54; gape, 1·20; tarsus, 1·55; middle toe, 1·11; middle toe and claw, 1·65. Measurements of No. 2,062 ♀ ad. June 23, 1880, Constitution Island, E. A. M.: length, 14·90; stretch, 37·75; wing, 11·00; tail, 6·40; culmen measured from frontal feathers, 1·15; from cere, .70; gape, 1·32; tarsus, 1·68; middle toe and claw, 1·85.

129. *Asio accipitrinus* (Pallas). SHORT-EARED OWL. Occasional in spring and fall.

130. *Strix nebulosa* (Forster). BARRED OWL. A permanent resident; breeds. Its notes may sometimes be heard during day-time.

Dimensions.—Measurements of No. 1,328, ♀ ad. October 23, 1876, Highland Falls, N. Y., E. A. M.: length, 19·25; stretch, 44·75; wing, 12·00; tail, 8·88.

131. *Nyctea scandiaca* (Linné). SNOWY OWL. Occasional in winter. One was captured in Orange County, about January 20, 1877. Has been reported from numerous points along the Hudson as far up as Fort Edward, in Washington County.

I saw this splendid Owl in the wild state on the 29th of October, 1880, near Garden City, on Long Island, N. Y. It flew from near the railroad: watching it from the car, I saw it alight on the ground amongst some sandy knolls, covered with red bunch-grass. On arriv-

ing at the nearest station, I started back, for the purpose of shooting it, but was disappointed in not finding it where it was seen from the train. It was found, however, about a mile farther east, surrounded by Crows (*Corvus americanus*), upon a sandy spot, where it looked like a patch of snow, in the midst of its black tormentors. The Crows scattered as I approached, and the Owl also flew slowly off, keeping just above the grass. It was followed by a part of the Crows, and soon lighted amongst the tussocks of grass. I crept up to within range, and shot it with No. 4 shot, and gave the hindermost of the retreating Crows the benefit of the left barrel, which was loaded with Bs. The Owl was not dead when I reached it, but made a fine display of courage when caught. Its eyes were wonderfully bright and full of fire; and it snapped its bill, and clawed fiercely; I offered it an empty shell, when reloading, which it seized and bit viciously. It uttered a squealing and also a grunting noise.

Dimensions.—Measurements of No. 815, ♂ ad. December 1, 1875 (shot on the south side of Long Island, N. Y., by Wm. Birch): length, 23·50; stretch, 58·31; wing, 14·75; tail, 9·38. Its stomach was distended with feathers. Measurements of No. 2,108, ♂ ad. October 29, 1880, Garden City, Long Island, E. A. M.: length, 22 85; stretch, 59·00; wing, 15·75; tail, 9·50; culmen, measured from frontal feathers, 1·53; from cere, 1·00; gape, 1·98; tarsus (about), 1·90; claw of the middle toe, 1·18. Stomach entirely empty.

Family, FALCONIDÆ.

132. Circus hudsonius (Linné). MARSH HAWK. A permanent resident; breeds. It occurs regularly in winter; particularly numerous in that of 1874-75, when numbers were observed in the bluish plumage. It breeds upon the marshes which connect Constitution, Consook and Iona islands to the main-land. One nest on Consook Marsh, which had been recently deserted by the young, was placed in the middle of the marsh; the ground around it was packed hard, and was bare of grass.

133. Accipiter fuscus (Gmelin). SHARP-SHINNED HAWK. A permanent resident; breeds.

Next to the Broad-winged, this is our most abundant Hawk. It builds upon trees, for the most part, though some nests are placed on ledges of rocks. During the spring movement, this species sometimes migrates in large flocks.

Dimensions.—Average measurements of three males: length, 11·45; stretch, 21·00; wing, 6·60; tail, 5·37; gape, ·65; tarsus, 1·96; middle toe, 1·19. Measurements of female: length, 14·00; stretch, 25·75; wing, 7·70; tail, 6·65; tarsus, 2·11.

134. Accipiter cooperi (Bonaparte). COOPER'S HAWK. A summer resident. Probably occurs in winter. Breeds abundantly.

I found a nest May 10, 1876, and fired a charge of dust shot into it to make it certain whether the nest was occupied, or not; the parent bird flew swiftly away, and, though I waited a long time for its return, it did not come back. Visiting the nest another time, I shouted and made as much din as possible about the tree; after a while the bird arose and looked over the edge of the nest, and then resumed its place upon it; a moment later it flew swiftly away. I fired after it, and the shot took effect in its breast and head; stretching its legs away down, and raising its wings high and beating them swiftly, it moved slowly in a wide circle, very high in the air; it came around above the nest, and then dropped just at my feet. Although not very severely injured, it made no display of courage. The nest, built in the quadruple fork of a chestnut-tree at a height of about forty feet, was composed of sticks, all of which were of small size; there was not a feather in it, and no pretence of a lining, save a few pieces of white-oak bark; its depression was slight. The eggs, four in number, were quite fresh: white, with a strong greenish tinge, with a few brown blotches on two of them.

A nest found May 2, 1878, was built in a basswood-tree (*Tilia americana*), beside a swampy pool in the midst of a wood. When approached, the female left her nest, and alighted on the opposite side of the morass; she was joined by her mate, and both set up a singular barking cry, repeated in rapid succession, and resembling, as much as anything, the prolonged utterance of the Flicker (*Colaptes auratus*). Then the male approached, and, circling overhead, lit on a tree near the nest, but soon retreated to the opposite side of the pool; both birds continuing their singular cry. The male bird was shot as he soared overhead, and his mate withdrew, and did not return that day. The nest was somewhat bulky, and contained four eggs. It was rather more concave than usual; built of small sticks, lined with a few pieces of rough bark, with no additional materials. The eggs differed from those previously described only in having no spots, which latter are unusual.

One nest contained only three eggs.

Dimensions.—Measurements of No. 1,226, ♀ ad., May 10, 1876, Highland Falls, N. Y., E. A. M.: length, 19·75; stretch, 35·00; wing, 10·13; tail, 8·75.

135. Astur atricapillus (Wilson). AMERICAN GOSHAWK. A winter resident, and spring and fall migrant. Seen in spring as late as April 28 (1877).

The Goshawk is rather frequently met with; but, owing to its shyness, is rarely killed. I obtained a single specimen from the Catskill,

mountains; and Mr. Wm. Church Osborn procured one at Garrisons, on the Hudson. Miss Anna B. Warner obtained a fine adult male on Constitution Island, on December 27, 1880. The gunners occasionally kill one. It likes to stay about the river marshes in winter.

Dimensions.—Measurements of No. 2,005, ♀ juv. December 2, 1879, Catskill mountains, N. Y., E. A. M.: length, 23·75; stretch, 44·25; wing, 13·10; tail, 11·00; culmen, .90; gape, 1·40; tarsus, 2·88; middle toe, 1·81; its claw, .77. Measurements of No. 2,170, ♂ ad., December 27, 1880, Constitution Island, Hudson River, N. Y., E. A. M.: length, 21·50; stretch, 41·50; wing, 12·50; tail, 9·50; culmen, measured from frontal feathers, 1·12; from cere, .83; cere, .40; gape, 1·25; tarsus, 2·88; middle toe and claw, 2·23; middle toe alone, 1·75; its claw, .67; hallux, .97; its claw, 1·08; inner toe, 1·00; its claw, 1·00; outer toe, 1·12; its claw, 53. Iris, bright carmine.

136. *Falco peregrinus nævius* (*Gmelin*). DUCK HAWK; AMERICAN PEREGRINE FALCON. A permanent resident; breeds.

I saw a fine mounted specimen in the possession of Mr. Daniel Ward, of Cornwall, which was shot while sitting upon a willow-tree in front of his residence, beside the Hudson. I have seen it frequently, but, chiefly through lack of skill in the use of the gun, have killed no specimens in the Highlands, though I procured one on the beach opposite Sayville, on Great South Bay, Long Island, on the 6th of October, 1880. There were several Duck Hawks on the beach, preying on small birds. The specimen shot had been feeding upon various passerine birds, which had first been roughly picked, and swallowed in large pieces. Whole legs of the Robin, Alice's Thrush, Catbird, and Warblers were found in its crop.

Upon the cliffs between West Point and Cornwall, the young are sometimes seen or heard; but the nest has not been found, and would probably prove to be inaccessible should it be discovered.

Dimensions.—Measurements of No. 2,100, ♀ juv. October 6, 1880, Sayville, Long Island, N. Y., E. A. M.: length, 19·40; stretch, 45·50; wing, 14·00; tail, 8·25; culmen from frontal feathers, 1·09; from cere, .85; cere alone, .30; bill from nostril, .81; gape, 1·85; tarsus, 2·23; middle toe and claw, 2·78; toe alone, 2·15; claw, .75.

137. *Aesalon columbarius* (*Linné*). PIGEON HAWK. By no means rare in autumn, winter and spring. My only specimen taken in the Highlands was shot in the act of destroying a hen.

Dimensions.—Measurements of No. 2,085, ♀ juv. September 16, 1880, Highland Falls, N. Y., E. A. M.: length, 12·60; stretch, 26·40; wing, 8·25; tail, 5·75; bill, measured from frontal feathers, .72; from cere, .59; from nostril, .54; gape, .85; tarsus, 1·57; middle toe, 1·45; middle toe and its claw, 1·80; claw alone, .48.

138. *Tinnunculus sparverius* (*Linné*). SPARROW HAWK. A

rare resident species. Never abundant except occasionally during migrations.

On February 18, 1879, Dr. Clinton L. Bagg saw a Sparrow Hawk at the foot of 110th street, at the East River in New York City, where it seemed to be chasing the House Sparrows (*Passer domesticus*). It appeared to be in nowise frightened at the numerous workmen about the docks, and flew about amongst them, and out over the river, frequently perching on some iron pillars on shore.

Dimensions.—Measurements of No. 1,355, ♂ ad. April 25, 1877, Highland Falls, N. Y., E. A. M.: length, 10·42; stretch, 22·38; wing, 7·37; tail, 4·85; culmen, measured from cere, .45; gape, .70; tarsus, 1·40; middle toe and claw, 1·21.

139. *Buteo borealis* (Gmelin). RED-TAILED HAWK. A permanent resident; abundant; breeds.

This handsome Buzzard feeds on mice, moles and shrews, which it finds in meadows. Though it likes to sit on a hay-pole and swoop down upon such small fry, it is often quite formidable, carrying off fowls from the barn-yards. It is able to capture even the Ruffed Grouse (*Bonasa umbellus*). I once saw a Red-tail fly a quarter of a mile, bearing a full grown Ruffed Grouse in its claws. I followed, and fired a shot at it, which caused it to let its prey drop to the ground from the tree where it was feeding; it afterwards appeared to regret leaving the Grouse, which was quite neatly picked, and had one side of the breast partly eaten.

Mice, shrews and moles are especially abundant upon the salt marshes which join numerous so-called islands in the Hudson River to the main-land. Upon the edges of these marshes and on the hay-poles, our three Buzzard Hawks (*Buteo borealis*, *B. lineatus* and *B. pennsylvanicus*) are ever present during the hard times in winter, hungry and shy, and ever ready to pounce upon the first unlucky quadruped that makes its appearance on the scene. It is pleasant to see them swoop upwards from the ground and alight upon a haystack, closing their wings instantly as their strong claws grasp the top of the pole, and striking at once a perfect balance, without a wing-stroke or a sudden movement.

Dimensions.—Measurements of adult female: length, 21·90; stretch, 51·00; wing, 14·75; tail, 9·00; culmen, 1·07; cere, .54; gape, 1·80; tarsus, 3·34; middle toe, 1·60; its claw, .88.

140. *Buteo lineatus* (Gmelin). RED-SHOULDERED HAWK. A permanent resident; abundant; breeds.

141. *Buteo pennsylvanicus* (Wilson). BROAD-WINGED HAWK. Our most abundant Hawk. A permanent resident, but only occasional in winter; breeds.

Migrants begin coming early in March, and, ere long, large flocks

appear, flying swiftly overhead, or soaring circularly. On wing, it gives several screams uttered in rapid succession, followed by a squealing note. It feeds on small quadrupeds, and salamanders. None of the numerous specimens dissected contained feathers, or other evidence of its feeding on birds.

In the spring of 1871, a nest was built in the wood adjoining my house, from which I took one of the young birds; it became a very interesting pet, quite gentle, and fond of me, but refusing to submit to being handled by any one else; but it was prone to wander abroad, and so was lost.

On May 8, 1872, I shot a male Broad-winged Hawk upon its nest, wounding it badly. It clawed me severely when I attempted to capture it. The nest was simply a repaired Crow's nest, from which I had taken a suite of eggs the year previously. The eggs, as in every nest that I have seen, were two in number. I shot the female several days later, and found it to be in immature plumage, although mated with an old bird. During the same season, another pair built a nest in the same wood, but both birds were shot before the eggs were laid. This nest became the home of still another pair of Broad-wings on the following season. They laid only two eggs, which were remarkable for being almost unspotted. When I climbed to the nest, the male bird flew to a branch over it, uttering loud, squealing cries, and thence darted swiftly past me, in uncomfortably close proximity to my head, so that I could feel the rush of air when he passed; then, perching above me again, he would lower his head, partly spread his wings, and incline his body downwards, uttering a whining whistle as he prepared to make another swoop. He looked very formidable. I heartily wished myself at the bottom of the tree. Only when I had reached the nest did the female leave it; then she merely withdrew to an adjoining limb, and replaced herself upon the nest as soon as I began to descend. Then the anxiety of the male (greatly to my delight) appeared to be much lessened. I left the eggs, hoping that more would be deposited, but in this I was disappointed. Several days later, I took the eggs, and found embryos considerably developed.

This Hawk commonly selects a deserted Crow's nest to build upon; but I have known them, several times, to build a new nest. I have twice found immature birds breeding, in which the stripes covered the belly.

Dimensions.—Average measurements of two *adult males*: length, 15·85; stretch, 35·85; wing, 10·58; tail, 6·65; culmen, measured from cere, ·74; cere, ·48; tarsus, 2·50; middle toe, 1·33; middle toe and claw, 1·84; claw alone, ·65. Average of three *adult females*: length, 17·08; stretch, 37·65; wing, 11·75; tail, 7·03; culmen, measured from

cere, .77; cere, .50; tarsus, 2.75; middle toe and claw, 1.90; claw alone, .64. Average of two young males: length, 15.93; stretch, 35.62; wing, 10.78; tail, 6.85; culmen measured from cere, .68; cere, .45; gape, 1.20; tarsus, 2.35; middle toe and claw, 1.70; toe alone, 1.18; claw, .58. Average of two young females: length, 16.45; stretch, 36.69; wing, 11.08; tail, 7.15; culmen measured from frontal feathers, 1.12; from cere, .77; bill from nostril, .72; gape, 1.37; tarsus, 2.43; middle toe and claw, 1.83; middle toe, 1.33.

142. *Archibuteo lagopus sancti-johannis* (Gmelin). AMERICAN ROUGH-LEGGED HAWK. Occurs rarely during migrations. I have also found it at Fort Miller, on the Hudson, in November, 1876.

143. *Pandion haliaetus carolinensis* (Gmelin). AMERICAN OSPREY; FISH HAWK. A common spring and fall migrant; occasional during summer. Its nest was found upon the cliffs north of West Point, many years ago. A few years since, Mr. Harold Herrick found a nest near Youkers, on the Hudson, which contained eggs.

Dimensions.—Average measurements of four specimens: length, 23.10; stretch, 64.00; wing, 18.25; tail, 8.40.

144. *Aquila chrysaetus canadensis* (Linné). AMERICAN GOLDEN EAGLE. Occasionally observed during spring, autumn and winter. It was formerly known to nest upon the cliffs on the west side of the Hudson, north of West Point; and it is not impossible that it still does so. Two Golden Eagles have been shot in the Highlands during the past few years. I have seen it on several occasions, but never in summer. In March, 1876, two of these Eagles were found in a certain spot in Putnam County for several weeks, but I did not succeed in shooting them. In April, 1872, I saw one twice, whose tail was all white, save a narrow terminal bar of black.

145. *Haliaetus leucocephalus* (Linné). WHITE-HEADED EAGLE. A permanent resident; breeds.

The White-headed or Bald Eagle constitutes a marked and romantic feature of the superb scenery of this part of the Hudson, lending another charm to a scene already grand and impressive, but rendered sublime and awe-inspiring by the presence of this noble bird, seen perched upon some blasted tree above the massive cliffs, or soaring in higher atmospheric regions, far above reach of the coming tempest, while its shrill scream falls faintly upon the ear, answering the loud, quavering cry of its nearer mate.

In winter, when the river is frozen, the Eagles are seen soaring above the mountains, searching for the scanty prey upon which they are obliged to subsist when fish, their favorite food, is unattainable; but later, when the ice is in motion in the Hudson, carried swiftly by the current, numbers of them may be seen sitting in pairs upon trees low down by the river's edge, watching for their funny prey, or else

floating upon the ice in the stream, in company with Crows and Gulls. In summer, their favorite perch is upon some withered tree on the mountain's side, from which, at intervals, they descend to the river, or some secluded lake, to seek their food. When the ice first breaks up in the Hudson, the Eagles are sometimes extremely abundant. At that season I have counted more than twenty-five that were in view at once.

Dimensions.—Average measurements of two *adult males*: length, 32·85; stretch, 84·10; wing, 22·00; tail, 11·90; bill from frontal feathers, 2·48; cere, .74; gape, 2·77; tarsus, 3·50; middle toe, 2·72; its claw, 1·37; inner toe, 1·66; its claw, 1·62; outer toe, 1·86; its claw, 1·17; hallux, 1·53; its claw, 1·69. Weight, 10 lbs., 4 oz., avoir. Average measurements of two *adult females*: length, 35·50; stretch, 39·00; wing, 24·00; tail, 12·25. Weight, 12 lbs., avoir.

Family, COLUMBIDÆ.

146. Ectopistes migratoria (Linné). PASSENGER PIGEON. A permanent resident. A few breed; and a few occur in winter.

Dimensions.—Average measurements of five *adult males*: length, 16·67; stretch, 24·30; wing, 7·88; tail, 7·80; culmen, .72; gape, 1·12; tarsus, 1·14; middle toe, 1·16; its claw, .37; middle toe and claw, 1·50. Average measurements of five *adult females*: length, 15·92; stretch, 23·96; wing, 7·76; tail, 7·27; culmen, .70; gape, 1·06; tarsus, 1·07; middle toe, 1·09; its claw, .35.

147. Zenædura carolinensis (Linné). MOURNING DOVE; CAROLINA DOVE. A permanent resident; breeds. Only occasional in winter.

Dimensions.—Average measurements of five specimens: length, 11·85; stretch, 17·90; wing, 5·72; tail, 5·50; culmen, .53; bill from nostril, .36; gape, .76; tarsus, .86; middle toe, .80; its claw, .24; middle toe and claw, 1·00.

Family, TETRAONIDÆ.

148. Bonasa umbellus (Linné). RUFFED GROUSE; PHEASANT; PARTRIDGE. An abundant resident species; breeds.

Family, Perdicidæ.

149. Ortyx virginiana (Linné). AMERICAN QUAIL; BOB-WHITE. A permanent resident; breeds.

A LIST
OF THE
BIRDS OF HUDSON HIGHLANDS
WITH ANNOTATIONS.

PART VII.

BY EDGAR A. MEARNS.

[From the BULLETIN OF THE ESSEX INSTITUTE, Vol. XIII, 75-93.]

A List of the Birds of the Hudson Highlands, with Annotations.

By EDGAR A. MEARNS.

[Continued from Vol. XII, page 128.]

Family, ARDEIDÆ.

150. *Ardea herodias*, Linné. GREAT BLUE HERON. A summer resident; abundant during spring and fall migrations; probably breeds. Arrives in April (26, 1874; 21, 1876; 4, 1877; 11, 1878). Departs the last of September, or later (September 20, 1876; 23, 1878; 25, 1879). A fine male was shot on Consook marsh on the 12th of December, 1880, when the temperature was low, and the Hudson frozen along shore, and the mountain lakes and ponds entirely closed.

This large and beautiful Heron remains in the Highlands during the breeding season and throughout the summer. I frequently see it flying over my house, towards the mountain, just at evening; but where it builds its nest, I have never discovered. Its large tracks are seldom absent during spring and summer, from the muddy margins of our solitary ponds. In general it is quite shy, flying away on the first approach of mankind; but, by seeking concealment and awaiting its return, its interesting habits can be studied. Soon it may be seen flying back, just skimming the tree-tops, and sailing slowly down over the pond. As it approaches the spot where it wishes to alight, it assumes a perpendicular position and holds its legs straight downward, and seems really to have alighted, but still glides onward, then actually settles, sinking in the water nearly up to its body. Then it casts a cautious glance around, and, should it descry any dangerous object, instantly betakes itself to flight, with heavy flapping of wings, soon mounting well up in the air. Should a number of Herons be present, as is the case during migrations, they may be seen chasing one another, dancing and executing various amusing antics.

Dimensions. — Measurements of No. 1,773, ♀ juv., September 23, 1878, Hudson River, at Cornwall, E. A. M.: length, 43·75; stretch, 69·50; wing, 16·75; tail, 7·00; length from tip of bill to end of longest toe, 59·00; culmen, 5·20; gape, 6·65; tarsus, 7·10. Measurements of

No. 2,172, ♂ ad., December 12, 1880, Consook Island, Hudson River, N. Y., E. A. M.: length, 47·50; stretch, 74·00; wing, 18·55; tail, 7·50; length from tip of bill to end of toes, 63·00; culmen, 5·80; gape, 7·35; bare part of tibia, 4·95; tarsus, 7·30; middle toe and claw, 5·10; middle toe alone, 4·45; its claw, ·70.

151. Herodias alba egretta, *Gmelin*. AMERICAN EGRET. A summer visitant. Observed at Cornwall, and at Cold Spring, in the Highlands. A specimen was shot at Yonkers, N. Y., in autumn, several years ago. Dr. A. K. Fisher recorded (Bull. Nutt. Orn. Club, Vol. IV, No. 1, p. 62) its capture at Sing Sing, on the Hudson; he also informed me verbally of one shot near Newburgh, N. Y., doubtless of this species, although not personally examined.

152. Butorides virescens, *Linné*. GREEN HERON. An abundant summer resident; breeds plentifully. Arrives about the last of April (27, 1873; May 22, 1874; 3, 1875; 3, 1876; 7, 1877; April 22, 1878; May 15, 1879; 13, 1880; 11, 1881), and departs in October.

The Green Heron builds its nest early in May. Its eggs are commonly deposited during the third week, although I have found them in June, and even July (4, 1872). It occupies the old nest season after season. Its eggs vary in number from four to six. On May 22, 1878, I found a very pretty nest, built in a festoon of grape-vine, swinging free over a pool in a swamp. The eggs were six in number, and incubation was considerably advanced.

Dimensions.—Average measurements of five females: length, 17·75; stretch, 26·75; wing, 7·19; tail, 8·00; culmen, 2·28; tarsus, 2·00; middle toe, 2·06; its claw, .34.

153. Nyctiardea grisea nævia, *Boddaert*. NIGHT HERON. A summer resident; breeds.

The Night Herons have established several breeding-places along the Hudson River. One of them is located in a large swamp of maple and birch saplings, with occasional large maples and groups of tall pine-trees, on Constitution Island, in the Hudson River. Dr. F. D. Lente, of Cold Spring, first informed me of its existence, in the spring of 1873. I first visited the Herony on June 4th. After proceeding a little way into the swamp, we were startled by the loud "squawking" and flapping of the Herons; and we immediately discovered a large number of their nests. As we advanced, every limb and crotch that was at all adapted to hold a nest was occupied. The birds were flying wildly about, and the air was filled with their discordant croaking. Now and then a sound like the barking of a dog was heard. We were astonished at the number of birds and nests, but were rather late for collecting the eggs, as the nests nearly all contained young, or eggs nearly hatched. The Herons offered no resistance when their nests were being pillaged, but sat around in trees at a short distance. We

examined a large number of nests, by climbing to one and then swinging to the nearest on the maple and white-birch saplings on which the nests were constructed. The young, none of which were more than two or three days old, were covered with gray down. The nests contained from one to four eggs each, and in three, which I examined, five eggs were found. Crows destroy their eggs, and to some such accident the lesser numbers of eggs was probably due. The ground was strewn with dead birds, which had been cruelly shot for sport.

On June 26, 1873, I again visited the Herons, examining many of their nests, most of which were deserted, however; but two nests contained three eggs each, perfectly fresh, which were probably a second brood, belonging to birds whose first nests had been spoiled after the first laying. Other nests were still occupied by fat young ones, that seemed to enjoy climbing to the extremity of the branches about the nest, and to the top of the tree, dropping or scrambling rapidly back into the nest, as I approached. Their irides are narrow; color, light carmine. By the 26th of August the Herons had all left the swamp. The atmosphere was foul from the stench arising from the decaying Herons, which were lying in numbers upon the ground, having been shot in mere wantonness by the gunners. Dead fishes were also strewn about. I noticed five different species which the Herons had brought to the swamp.

On the succeeding season (1874) only one or two pairs of Night Herons had the courage to return to the old breeding-place, where they had been so cruelly treated; but those birds re-established the Heronry, and founded a city upon the ruins of the past, which has been the happy home of hundreds of prosperous "Squawks" ever since. Their swamp is a long stretch of oozy land, at the east side of Constitution Island; and their best friends are the lady owners of the island—the Misses Warner. The trees are mainly saplings; and on the top of each is placed a bulky nest, composed of sticks, which are arranged in an orderly manner, making a pretty, clean receptacle for the eggs, which vary in number from four to six, are bluish-green in color, and measure $2\cdot25 \times 1\cdot55$ of an inch. They arrive from the South during the first or second week in April. The old nests are carefully repaired; and during this busy time the birds fly back and forth, industriously carrying sticks and arranging them carefully in their nests, so as to form a good-sized basin, sufficiently concave to prevent the eggs from rolling out in case of high winds. Curved twigs are selected, and so placed as to radiate from the centre outwards, with their concavity directed upwards. This disposition of the twigs gives to the outside of the nest a rather bristling aspect. Some branches have green leaves attached to them, showing that the builders break them off from the living tree. One nest was quite well

lined with loose green leaves, plucked from a neighboring tree. Four or five is the usual complement of eggs; but six were taken from one nest, on May 23, 1877. In flight, the Heron's neck is retracted so that its head nestles upon its shoulders, and its legs extend straight behind, looking like a couple of long, central tail-feathers. Sticks, for building, are carried crosswise in its beak. Oviposition begins early in May; but (as I have also observed in young birds of other species) the immature Herons breed somewhat later than do the patriarchs of the settlement, and these newly-wedded birds may be found having fresh eggs late in the month.

As one enters the swamp, the sitting Herons leave their nests with heavy wing-strokes, and loud *quawk-quawk*, which, as they alight in distant pine-trees, are followed by a series of guttural, and barking sounds. When shot they usually clutch the first branch they strike, and cling to it as long as life remains. One that I shot as it flew overhead lodged in a tree-top, holding on to a branch with its feet, with body hanging down; soon, however, it managed to hook its bill over the limb, and finally got upon the branch, and sat erect, but suddenly fell off its perch quite dead. On the ground, they attempt to escape by running swiftly through the patches of tall ferns, brakes and bushes, which grow so abundantly in the swamp. One of my shots broke the wing of a flying Heron. It fell to the ground, and ran through some beds of high ferns, croaking so fearfully that I soon had the entire Heroury "squawking" over my head, as I pursued my wounded bird. At length it squatted, but as its white plumage could not readily be concealed, I caught it, and ended its existence, after no tame struggle on the Heron's part; meanwhile its cries were deafening.

Night Herons breed while still in immature plumage. A male in the dress of the second season was shot while carrying a stick to its nest, on May 23, 1877. It sailed into a distant tree, where I discovered it sitting upright, with neck drawn in. Soon it grew weak, swayed from side to side, at last drooping, as life became extinct, but still clinging to the branch, although I found it quite dead on climbing up to dislodge it. In this stage, its eyes are light red. In still younger birds, during the first autumn, the iris is straw-color; but, as I have previously stated, the nestlings have very light red irides. While I sat in the tree-top examining my prize, a fine old bird alighted close beside me, standing erect, with crest alternately raised and depressed—the only expression of a fear so intense as to paralyze every muscle. It sat erect, with neck extended. I noted especially the beauty and brilliancy of its eye, and that the long occipital feathers fitted together so as to present the appearance of a single long plume, hanging over the back and down by its side. At

my first movement the spell was broken, and the Heron flew away with a squawk that awoke the echoes. At first its legs dangled; afterward they were extended straight out beyond its tail.

Night Herons feed almost exclusively upon fishes and batrachians. They are frequently seen flying along the Hudson during summer evenings. I also see them, throughout the summer, about some ponds near my residence. They depart during September. They breed in the Central Park, New York City, where I have seen one as late as November 2, 1880. I also shot an adult bird at Sayville, Long Island, on October 6, 1880. I know of four large Heronries along the Hudson River. The largest one, judging from accounts of it, is at, or near, Low Point, in Dutchess County. Another, the highest up the river, is located on a low island, below Albany, where Mr. Robt. T. Morris has taken its eggs, and where I saw the birds in abundance, during the breeding season, in 1875.

Dimensions.—Average measurement of eleven adults: length, 26·18; stretch, 45·85; wing, 12·00; tail, 4·75; length from tip of bill to end of toes, 33·55; bill from nostril, 2·11; culmen, 3·06; gape, 4·22; length of nasal orifice, .67; tarsus, 3·29; hallex, 1·30; its claw, .77; inner toe, 1·92; its claw, .58; middle toe, 2·90; its claw, .57; middle toe and its claw, 3·55; outer toe, 2·14; its claw, .46; length of occipital plumes, 8·33.

154. Botaurus lentiginosus, Montague. AMERICAN BITTERN. A spring and fall migrant; possibly remains during summer, and breeds.

155. Ardetta exilis, Gmelin. LEAST BITTERN. The late Frederick S. Osborn found this species near his residence, at Garrisons, on the Hudson, in spring.

Family, CHARADRIIDÆ.

156. Charadrius dominicus, Müller. AMERICAN GOLDEN PLOVER. Only observed as an autumnal migrant. Shot at Cornwall.

157. Oxyechus vociferus, Linné. KILDEER PLOVER. Rare during migrations.

Family, SCOLOPACIDÆ.

158. Philohela minor, Gmelin. AMERICAN WOODCOCK. A very abundant summer resident; breeds. Arrives early in March, and departs late in November.

This glorious game-bird infests all of our swampy swales and meadows, and affords rare sport to the gunners. It reaches us by the beginning of March, unless the season should be backward, and breeding begins early. The young ones are running about early in

April. Its nest is merely a bed of leaves, and sometimes not even that make-shift of a nest is used, but the eggs are deposited directly upon the bare ground, as in one case where I found four eggs lying upon the black earth, between two surface roots of a cedar-tree.

John Lawson, in his "New Voyage to Carolina," printed in the year 1709, gave the following quaint information concerning the habits of the Woodcock and his appreciation of its flesh: "The Woodcocks live and breed here, though they are not in great plenty, as I have seen them in some Parts of *England* and other Places. They want one-third of the *English* Woodcock in Bigness; but differ not in Shape, or Feather, save that their breast is of a Carnation Colour; and they make a Noise (when they are on the Wing) like the Bells about a Hawk's Legs. They are certainly as dainty Meat as any in the World. Their abode is in all Parts of this Country, in low, boggy Ground, Springs, Swamps, and Percoarsons."

159. Gallinago media wilsoni, Temminck. WILSON'S SNIPE. A common spring and fall migrant. In autumn, most abundant during October. In spring, I have taken it as late as April 19 (1879).

Dimensions.—Average measurements of four males: length, 10·78; stretch, 16·90; wing, 5·09; tail, 2·30; culmen, 2·46; tarsus, 1·20; middle toe, 1·18; its claw, ·28.

160. Ereunetes pusillus, Linné. SEMIPALMATED SANDPIPER. A migrant. Two specimens were shot from a flock on September 25, 1879, near Cold Spring.

Dimensions.—Average measurements of two males (Nos. 2,000 and 2,001, ♂♂ ad. ad., Cold Spring, N. Y., September 25, 1879, E. A. M.): length, 6·03; stretch, 11·83; wing, 3·66; tail, 1·57; culmen, ·68; gape, ·67; tarsus, ·81; middle toe, ·59; its claw, ·12.

161. Totanus melanoleucus, Gmelin. GREATER YELLOW-LEGS; TELL-TALE. A spring and fall migrant.

162. Totanus flavipes, Gmelin. YELLOW-LEGS. A spring and fall migrant. Both species of *Totanus* occur in occasional large flocks, during migrations, but neither can be said to be common.

163. Rhyacophilus solitarius, Wilson. SOLITARY SANDPIPER. Abundant during migrations, and late in summer. Arrives in April (25, 1874), and remains until late in May (24, 1874; 19, 1876; 15, 1877). About midsummer it again appears (July 6 and 20, 1874), and remains until October (15, 1876; September 25, 1879).

This species is of occasional occurrence along the river-bank, and usually quite abundant about small inland ponds.

Dimensions.—Average measurements of six males: length, 8·36; stretch, 16·33; wing, 5·20; tail, 2·30; culmen, 1·11; gape, 1·25; tarsus, 1·20; middle toe, ·96; its claw, ·19.

164. Tringoides macularius, Linné. SPOTTED SANDPIPER.

A common summer resident; breeds. Arrives in April (May 9, 1874; April 26, 1875; 29, 1876; 30, 1877; 20, 1878; 19, 1879; 20, 1880; May 8, 1881), and departs in October.

Dimensions.—Average measurements of eleven adult specimens: length, 7·87; stretch, 13·67; wing, 4·30; tail, 2·18; culmen, .95; gape, 1·03; tarsus, 1·93; middle toe, .83; its claw, .19.

Family, RALLIDÆ.

165. *Rallus longirostris crepitans*, Gmelin. CLAPPER RAIL. Occasionally shot in autumn.

166. *Rallus virginianus*, Linné. VIRGINIA RAIL. A summer resident; breeds.

167. *Porzana carolina*, Linné. CAROLINA RAIL; SORA. A summer resident; breeds.

Dimensions.—Average measurements of fourteen specimens: length, 9·00; stretch, 14·30; wing, 4·35; tail, 2·25; length from tip of bill to end of toes, 12·75; bill from nostril, .44; culmen, .89; gape, .90; tarsus, 1·36; middle toe, 1·43; its claw, .35; middle toe and claw, 1·75.

168. *Gallinula galeata*, Lichtenstein. FLORIDA GALLINULE. A summer resident. Mr. Francis Butterfass, of Cold Spring, has a mounted specimen which he shot near Cold Spring, on the Hudson. Mr. Winfrid A. Stearns states (List of Birds in the Vicinity of Fishkill-on-Hudson, N. Y., 1880) that a single specimen was shot at Fishkill, on the Hudson. Bonaparte observes (Wilson and Bonaparte, American Ornithology, Vol. III, p. 402, 1828): “In the middle and northern United States it appears to be quite accidental; for, although a few well authenticated instances are known of its having been seen and shot, even as far as Albany, in the State of New York, it has escaped the researches of Wilson, as well as my own. It is by no means, therefore, a common bird, and is not known as inhabiting arctic America, ranging much less to the north, even as a straggler, than its European analogue.”

169. *Fulica americana*, Gmelin. AMERICAN COOT. Abundant on the Hudson River in spring and fall.

Dimensions.—Measurements of No. 800, ♂ ad., Hudson River, October 11, 1875, E. A. M.: length, 14·50; stretch, 26·00; wing, 7·19; tail, 1·94; length from tip of bill to end of toes, 20·00.

Family, ANATIDÆ.

170. *Olor americanus*, Sharpless. AMERICAN SWAN; WHISTLING SWAN. An occasional visitant. Dr. A. K. Fisher informed me

that one was shot, several years since, on the Hudson River near Newburgh, by a gunner, who brought it to the house of his aunt, for sale. Another Swan was shot on one of the small lakes near Highland Falls, on October 21, 1880.

171. *Chen hyperboreus*, Pallas. SNOW GOOSE. A large flock of Snow Geese settled upon the Hudson, near Cornwall, a year or two ago; they were too wild to allow the gunners to obtain a shot, although Mr. "Josh" Ward endeavored to shoot a specimen for me.

172. *Bernicla canadensis*, Linné. CANADA GOOSE. Abundant during migrations.

173. *Bernicla brenta*, Pallas. BRANT. Occurs during migrations. Mr. Stearns says (List of Birds In Vicinity of Fishkill-on-the-Hudson, N. Y., 1880) that it is "not rare" in fall, at Fishkill, on the Hudson.

174. *Anas boscas*, Linné. MALLARD. Found during spring and fall migrations.

175. *Anas obscura*, Gmelin. BLACK DUCK. A very abundant spring and fall migrant; less numerous in summer and winter; breeds.

The Black Duck, although often seen in immense beds on the Hudson River, is rather partial to small creeks, and inland ponds and pools. It commonly feeds upon the salt marshes beside the river. On land, its movements appear awkward, although it manages to waddle over the humpy meadows with considerable celerity. At such times a side view is very pleasing, although a posterior one is most ludicrous. Its tail wiggles incessantly, while its body performs a remarkable series of lateral oscillatory movements, especially when walking over tussocks of grass. When alarmed it stretches its neck to the full extent, and then squats amongst the hummocks, and remains motionless. It swims very rapidly, and rises from the water with great swiftness. When a flock of Dusky Ducks is about to alight, the birds circle around the intended spot, and then drop vertically down from a considerable height, making a loud splash as they strike the water.

Dimensions.—Average measurements of two adult males: length, 24·50; stretch, 38·50; wing, 11·00; tail, 4·35; culmen, 2·33; gape, 2·65 tarsus, 2·00; middle toe, 2·17; its claw, ·44.

176. *Chaulelasmus streperus*, Linné. GADWALL. A spring and fall migrant.

177. *Dafila acuta*, Linné. PINTAIL. Quite common during migrations.

178. *Mareca americana*, Gmelin. AMERICAN WIDGEON; BALDPATE. A common species during migrations.

Dimensions.—Measurements of No. 888, ♂ ad., Highland Falls, N. Y., March 12, 1876, E. A. M.: length, 20·25; stretch, 34·50; wing,

9·88; tail, 4·50; culmen, 1·38; gape, 1·60; tarsus, 1·45; hallex and its claw, .52; middle toe and claw, 2·00.

179. Spatula clypeata, Linné. SHOVELLER; SPOONBILL. Occurs during autumn, winter and spring.

Dimensions.—Measurements of adult male: length, 20·10; stretch, 32·00; wing, 9·42; tail, 8·65; culmen, 2·60; tarsus, 1·25.

180. Querquedula discors, Linné. BLUE-WINGED TEAL. Abundant during migrations.

181. Nettion carolinensis, Gmelin. GREEN-WINGED TEAL. Abundant during migrations.

182. Aix sponsa, Linné. WOOD DUCK; SUMMER DUCK. A summer resident; breeds.

Dimensions.—Average measurements of three specimens: length, 17·35; stretch, 29·00; wing, 8·44; tail, 4·50.

183. Fulix marila, Linné. SCAUP DUCK; GREATER BLACKHEAD. Very abundant during autumn, winter and spring.

Dimensions.—Measurements of No. 1,841, ♂ ad., Hudson River, at Cornwall, March 28, 1879, E. A. M.: length, 19·65; stretch, 33·75; wing, 8·80; tail, 2·85; culmen, 1·69; gape, 2·23; tarsus, 1·58; middle toe, 2·50; its claw, .38.

184. Fulix affinis, Eyton. LITTLE BLACKHEAD. A common species during migrations, and in winter.

Dimensions.—Measurements of No. 543, ♂ ad., Highland Falls N. Y., December 6, 1873, E. A. M.: length, 16·10; stretch, 28·30; wing, 8·00; tail, 2·60; culmen, 1·61; bill from nostril, 1·12; gape, 2·03; tarsus, 1·45; middle toe and claw, 2·50.

185. Fulix collaris, Donovan. RINGNECKED BLACKHEAD. Occasional during migrations.

186. Æthyia vallisneria, Wilson. CANVAS-BACK. Quite common in autumn, winter and spring.

Dimensions.—Average measurements of Nos. 1,341 and 1,342, ♂♂ ad. ad., Hudson River, at Cornwall, March 23, 1877, E. A. M.: length, 22·31; stretch, 34·92; wing, 9·19; tail, 2·59; culmen, 2·94; gape, 2·59; tarsus, 1·75; length from tip of bill to end of toes, 26·00.

187. Æthyia americana, Eyton. REDHEAD. Not as abundant as the preceding species, but sometimes plentiful in autumn. Some that were shot at Cornwall on October 23, 1877, were moulting, and in such bad plumage that they could not be preserved as specimens.

188. Clangula glaucium americana, Bonaparte. AMERICAN GOLDEN-EYE. Very abundant in autumn, winter and spring.

The Golden-eyes are fond of keeping in mid-stream amongst the floating ice-cakes, skulking behind some larger mass whenever an attempt is made to get near them. As they take to flight, the loud, ringing whistle of their wings may be heard a long way off—a very

pleasant sound! As long as the smallest spot remains unfrozen, the "Whistlers" stay upon the Hudson; and I have seen them flying northward when the river was entirely closed above West Point.

Dimensions. — Measurements of No. 819 ♀, Highland Falls, N. Y., December 8, 1875, E. A. M.: length, 17·13; stretch, 29·00; wing, 7·81; tail, 3·00.

189. Clangula albeola, Linné. BUTTERBALL; BUFFLEHEAD. A very common winter resident. It occasionally frequents small inland ponds.

190. Harelda glacialis, Linné. OLD SQUAW; LONG-TAILED DUCK. A very abundant spring and fall migrant, and winter resident when the Hudson is not frozen.

When heard at a distance, the loud cackling notes of hundreds of Old Squaws, borne from afar on frosty winds, strike the ear most pleasantly, bearing sweet remembrances of happy days spent on blue billows, amid the whistling wings of gay water-fowl and the beauteous forms of sea-birds. When the water is rough, the Old Squaws are reluctant to take to flight, or, perhaps, are more gentle than at other times. As you approach, they become greatly disturbed, however, and some of the old males get so much excited that they are barely able to sit upon the water. The females commonly dive, coming to the surface at an increased distance from you. The males elevate their tails until they stick perpendicularly upward, and rapidly vibrate them, at the same time throwing their heads backward, and turning around so swiftly on the water as to seem at times fairly to spin like a top, and croak loudly all the time.

On the 3d of November, 1879, I made the following observation on the rapidity of the flight of the Long-tailed Duck:—just after leaving the Sing Sing depot, going south on the Hudson River Railroad, a small flock of Old Wives arose from the water and flew in a direct course down the Hudson. Their white colors were very distinctly visible, as seen against the deep blue of the river. I noticed that they maintained about the same relative position with regard to the train, which, however, had not yet gotten under full headway; but the Ducks changed their course at intervals, and at times they would rise in the air, separating from each other, and then descending swiftly to near the surface of the water; then, for a time, the impetus thus acquired would carry them onward at an accelerated speed. As our train got fairly under way, and, fortunately for my observation, the Ducks ceased to move indirectly, and skimmed along close to the water, keeping about in the middle of the river. It so happened that the regular rate of speed at which the train moved was exactly equal to the rate at which the Ducks flew; accordingly they kept their relative position opposite to us as long as our course lay along the river;

when the train slowed up, before turning back from the Hudson, at Spuyten Duyvil, the Ducks flew ahead. In order to get at the exact distance and time, I wrote to the General Superintendent of the railroad, who kindly sent the following reply: "Referring to yours of this date, relative to train, stops, and distances, Nov. 3, 1879: The train alluded to left Garrisons at 7.52 A. M., Sing Sing 8.30 and Spuyten Duyvil 8.58; and the distance between Sing Sing and Spuyten Duyvil is 19 $\frac{56}{700}$ miles." Signed, "J. M. Toucey, Gen'l Sup't." The time, then, was exactly 28 minutes, and the distance 19.56 miles; this makes their rate of flight 1 mile in 1.43 minutes, or rather more than a mile in a minute and a half.

Dimensions.—Average measurements of three adult males: length, 23·00; stretch, 31·00; wing, 8·75; tail, 8·75; culmen, 1·12; gape, 1·77; tarsus, 1·40; middle toe and claw, 2·20; middle toe alone, 1·95; claw, ·34.

191. *Edema americana*, Swainson and Richardson. AMERICAN SCOTER. Very abundant during migrations.

Dimensions.—Average measurements of three females: length, 18 24; stretch, 32·00; wing, 8·13; tail, 3·55; culmen, 1·63. Measurements of No. 796, ♂ ad., Hudson River, at Cornwall, October 9, 1875, E. A. M.: length, 20·50; stretch, 33·65; wing, 8·56; tail, 3·65.

192. *Melanetta velvetina*, Cassin. AMERICAN VELVET SCOTER. Very abundant during spring and fall migrations; occasionally seen in winter.

Dimensions.—Average measurements of four adult males: length, 22·50; stretch, 39·50; wing, 10·80; tail, 4·00; culmen, 1·55; gape, 2·78; tarsus, 2·00; middle toe and claw, 3·25; middle toe alone, 2·90; its claw, ·40. Average measurements of two adult females: length, 21·00; stretch, 37·50; wing, 10·10; tail, 3·45; culmen, 1·55; gape, 2·65; tarsus, 1·55; middle toe and claw, 3·20; middle toe alone, 2·80; its claw, ·42.

193. *Pelionetta perspicillata*, Linné. SURF DUCK; SEA COOR. Abundant during spring and fall migrations. Arrives earlier than the Velvet Duck, in autumn.

Dimensions.—Average measurements of two adult males: length, 20·10; stretch, 34·00; wing, 9·15; tail, 3·10; culmen, 1·53; gape, 2·58; tarsus, 1·82; middle toe, 2·67; its claw, ·40; middle toe and claw, 3·00.

194. *Erismatura rubida*, Wilson. RUDDY DUCK. An abundant spring and fall migrant. In autumn the Ruddys are very gentle, but expert divers.

Dimensions.—Average measurements of three females: length 14·55; stretch, 22·00; wing, 5·40; tail, 2·50; culmen, 1·60; gape, 1·80.

195. *Mergus merganser americanus*, Cassin. AMERICAN SHELDRAKE. A common winter resident.

This beautiful bird, though less abundant than the Red-breasted Sheldrake, is still quite plentiful on the Hudson. It often sits on shore, sunning itself and preening its feathers, or exploring crevices along the rocky shore. It feeds principally on fishes, which it is very expert at catching. I have often found a species of flat-fish in its gullet.

Dimensions.—Measurements of two adult females: length, 24·15; stretch, 33·50; wing, 9·23; tail, 4·15; culmen, 1·92; tarsus, 1·90; middle toe and claw, 2·80; length from tip of bill to end of toes, 25·00. Measurements of No. 1,343, ♂ ad., Hudson River at Cornwall, March 23, 1877, E. A. M.: length, 26·65; stretch, 37·00; wing, 10·30; tail, 4·75; culmen, 2·78; gape, 2·75; tarsus, 1·92; middle toe and claw, 3·00; length from tip of bill to end of toes, 27·30.

196. *Mergus serrator*, Linné. RED-BREASTED SHELDRAKE. A very abundant spring and fall migrant, and winter resident.

Dimensions.—Average measurements of two adult males: length, 24·00; stretch, 35·00; wing, 9·40; tail, 4·20; culmen, 2·35; gape, 2·90; tarsus, 1·86; middle toe, 2·40; its claw, ·40. Average measurements of two adult females: length, 22·00; stretch, 33·00; wing, 9·05; tail, 3·75; culmen, 2·16; gape, 2·61; tarsus, 1·75; middle toe, 2·21; its claw, ·35.

197. *Lophodytes cucullatus*, Linné. HOODED SHELDRAKE. A common winter resident.

Dimensions.—Average measurements of two males: length, 18·38; stretch, 26·50; wing, 7·25; tail, 3·81.

Family, **LARIDÆ.**

198. *Larus argentatus*, Brünnich. HERRING GULL. Usually abundant upon the Hudson during autumn, winter and spring, save when the river is frozen. It breeds in the Adirondack mountains.

199. *Larus delawarensis*, Ord. RING-BILLED GULL. Occasional in winter and spring.

200. *Larus atricilla*, Linné. LAUGHING GULL. I have seen a specimen, shot on the Hudson, at Cornwall, from a large flock; another shot at Cold Spring, on the Hudson. Both birds were taken in the spring. Another black-headed Gull was seen on the Hudson, near Constitution Island; it was so gentle that a boatman attempted to strike it with an oar, when it flew to a buoy and alighted.

201. *Larus philadelphiæ*, Ord. BONAPARTE'S GULL. A winter resident; abundant in autumn.

Dimensions.—Average measurements of numbers 1,515 and 1,516 ♂

♂ ad. ad., Hudson River at Cornwall, November 17, 1877, E. A. M.: length, 14·61; stretch, 33·33; wing, 10·18; tail, 4·30; culmen, 1·22; gape, 1·89; tarsus, 1·32; middle toe and claw, 1·44; hallex, ·18; claw, ·12.

202. *Sterna fluviatilis*, Naum. COMMON TERN; SEA SWALLOW. Only once observed,—on Nov. 15, 1874.

203. *Sterna fuliginosa*, Gmelin. SOOTY TERN. On September 14, 1878, I saw one of these beautiful birds near West Point, from the deck of a little steam yacht. It flew quite near, and I wished for a gun to secure so rare a prize. To my great delight, however, a beautiful specimen was presented to me by Miss Anna B. Warner. It was killed by flying against the boathouse on Constitution Island, on the day previous to that on which I saw my bird.

Dimensions.—Measurements of No. 1772, ♀ ad., Constitution Island, Hudson River, N. Y., September 13, 1878, E. A. M.: length, 17·50; stretch, 34·70; wing, 11·00; tail, 6·60.

204. *Hydrochelidon lariformis*, Gmelin. BLACK TERN. The late Frederick S. Osborn shot three of these Terns in the autumn of 1874, near Garrisons, on the Hudson. I have seen one of the specimens in his collection; he also informed me that they were shot from a flock of about fifty birds. Mr. Thomas W. Wilson saw two Terns which were supposed to be of this species, about September 11, 1879, near Cold Spring.

Family, PODICIPIDÆ.

205. *Podiceps holbölli*, Reinhardt. AMERICAN RED-NECKED GREBE. Quite abundant, at times, in autumn, winter and spring.

Dimensions.—Average measurements of two males: length, 21·55; stretch, 34·58; wing, 7·30; length from tip of bill to end of toes, 26·75; culmen, 2·06; tarsus, 2·61; middle toe and claw, 3·00.

206. *Dytes auritus*, Linné. HORNED GREBE. A very common spring and fall migrant; occasional in winter.

Dimensions.—Average measurements of four adults: length, 14·30; stretch, 24·38; wing, 5·40; tail, 1·55; culmen, ·91; gape, 1·32; tarsus, 1·85; middle toe and claw, 2·00; middle toe alone, 1·70; its claw, ·31.

207. *Podilymbus podiceps*, Linné. PIED-BILL GREBE; DAB-CHICK. Abundant during migrations; occasional in summer; doubtless breeds.

Dimensions.—Average measurements of four specimens: length, 13·65; stretch, 22·60; wing, 4·95; tail, 1·55; culmen, ·86; bill from nostril, ·55; gape, 1·38; tarsus, 1·64; middle toe and claw, 2·30; middle toe alone, 2·00.

Family, **COLYMBIDÆ.**

208. *Colymbus torquatus*, Brünnich. LOON; GREAT NORTHERN DIVER. A common spring and fall migrant. A few possibly remain during summer, and breed.

209. *Colymbus septentrionalis*, Linné. RED-THROATED DIVER. The first specimen of this species taken on the Hudson, was procured by Peter de Nottbeck, Esq., on November 14, 1876, at Low Point, sixty-one miles from New York City.¹ Mr. Winfrid A. Stearns has since recorded another capture, in his "List of Birds in Vicinity of Fishkill-on-Hudson, N. Y.," page 15.

B. LIST OF THE FAMILIES OF BIRDS KNOWN TO INHABIT THE HUDSON HIGHLANDS, WITH THE NUMBER OF THEIR REPRESENTATIVE SPECIES.

SPECIES.					SPECIES.					
1	Turdidæ .	.	.	.	7	20	Caprimulgidæ .	.	.	2
2	Saxicolidæ .	.	.	.	1	21	Cypselidæ .	.	.	1
3	Sylviidæ .	.	.	.	2	22	Trochilidæ .	.	.	1
4	Paridæ .	.	.	.	1	23	Alcedinidæ .	.	.	1
5	Sittidæ .	.	.	.	2	24	Cuculidæ .	.	.	2
6	Certhiidæ .	.	.	.	1	25	Picidæ .	.	.	6
7	Troglodytidæ .	.	.	.	3	26	Strigidæ .	.	.	6
8	Alaudidæ .	.	.	.	1	27	Falconidæ .	.	.	14
9	Motacillidæ .	.	.	.	1	28	Columbidæ .	.	.	2
10	Sylvicolidæ .	.	.	.	32	29	Tetraonidæ .	.	.	1
11	Tanagridæ .	.	.	.	1	30	Perdicidæ .	.	.	1
12	Hirundinidæ .	.	.	.	6	31	Ardeidæ .	.	.	6
13	Ampelidæ .	.	.	.	2	32	Charadriidæ .	.	.	2
14	Vireonidæ .	.	.	.	6	33	Scolopacidæ .	.	.	7
15	Laniidæ .	.	.	.	1	34	Rallidæ .	.	.	5
16	Fringillidæ .	.	.	.	26	35	Anatidæ .	.	.	28
17	Icteridæ .	.	.	.	8	36	Laridæ .	.	.	7
18	Corvidæ .	.	.	.	3	37	Podicipitidæ .	.	.	3
19	Tyrannidæ .	.	.	.	8	38	Colymbidæ .	.	.	2

¹ See Bull. Nutt. Orn. Club, Vol. III, No. 3, p. 146, July, 1878.

C. SPECIAL LISTS, GIVING, IN TABULAR FORM, THE PERMANENT RESIDENTS, SUMMER AND WINTER SOJOURNERS, AND SPRING AND FALL MIGRANTS.²

(A.) PERMANENT RESIDENTS.

1	Turdus migratorius.	18	Scops asio.
2	Sialia sialis.	19	Asio americanus.
3	Parus atricapillus.	20	Strix nebulosa.
4	Sitta carolinensis.	21	Circus hudsonius.
5	Ampelis cedrorum.	22	Accipiter fuscus.
6	Carpodacus purpureus.	23	Falco peregrinus nævius.
7	Astragalinus tristis.	24	Tinnunculus sparverius.
8	Melospiza fasciata.	25	Buteo borealis.
9	Passer domesticus.	26	Buteo lineatus.
10	Sturnella magna.	27	Buteo pennsylvanicus.
11	Corvus frugivorus.	28	Haliæetus leucocephalus.
12	Cyaucitta cristata.	29	Zenædura carolinensis.
13	Picus villosus.	30	Ectopistes migratoria.
14	Picus pubescens.	31	Bonasa umbellus.
15	Melanerpes erythrocephalus.	32	Ortyx virginiana.
16	Colaptes auratus.	33	Anas obscura.
17	Bubo virginianus.		

(B.) SUMMER RESIDENTS.

1. Species Known to Breed.

1	Turdus migratorius.	17	Dendrœca aestiva.
2	Turdus mustelinus.	18	Dendrœca virens.
3	Turdus fuscescens.	19	Dendrœca pennsylvanica.
4	Mimus carolinensis.	20	Dendrœca discolor.
5	Harporhynchus rufus.	21	Siurus auricapillus.
6	Sialia sialis.	22	Siurus motacilla.
7	Parus atricapillus.	23	Geothlypis trichas.
8	Sitta carolinensis.	24	Icteria virens.
9	Troglodytes domesticus.	25	Myiodioctes mitratus.
10	Telmatodytes palustris.	26	Setophaga ruticilla.
11	Mniotilla varia.	27	Pyranga rubra.
12	Parula americana.	28	Hirundo erythrogaster.
13	Helmitherus vermivorus.	29	Tachycineta bicolor.
14	Helminthophaga pinus.	30	Petrochelidon lunifrons.
15	Helminthophaga chrysoptera.	31	Cotyle riparia.
16	Helminthophaga ruficapilla.	32	Stelgidopteryx serripennis.

² The plan of these tables is based upon Dr. C. Hart Merriam's excellent "Review of the Birds of Connecticut," and no pretence of originality is made.

33	Progne subis.	67	Trochilus colubris.
34	Ampelis cedrorum.	68	Ceryle alcyon.
35	Vireo olivaceus.	69	Coccyzus erythrophthalmus.
36	Vireo gilvus.	70	Coccyzus americanus.
37	Vireo flavifrons.	71	Picus villosum.
38	Vireo noveboracensis.	72	Picus pubescens.
39	Carpodacus purpureus.	73	Colaptes auratus.
40	Astragalinus tristis.	74	Bubo virginianus.
41	Pooecetes gramineus.	75	Scops asio.
42	Coturniculus passerinus.	76	Asio americanus.
43	Melospiza palustris.	77	Strix nebulosa.
44	Melospiza fasciata.	78	Circus hudsonius.
45	Spizella socialis.	79	Accipiter fuscus.
46	Spizella pusilla.	80	Accipiter cooperi.
47	Passer domesticus.	81	Falco peregrinus nævius.
48	Zamelodia ludoviciana.	82	Tinnunculus sparverius.
49	Passerina cyanea.	83	Buteo borealis.
50	Pipilo erythrophthalmus.	84	Buteo lineatus.
51	Dolichonyx oryzivorus.	85	Buteo pennsylvanicus.
52	Molothrus ater.	86	Haliaëetus leucocephalus.
53	Agelæus phœniceus.	87	Ectopistes migratorias.
54	Sturnella magna.	88	Zenædura carolinensis.
55	Icterus spurius.	89	Bonasa umbellus.
56	Icterus galbula.	90	Ortyx virginianus.
57	Corvus frugivorus.	91	Philohela minor.
58	Cyanocitta cristata.	92	Tringoides macularius.
59	Tyrannus carolinensis.	93	Butorides virescens.
60	Myiarchus crinitus.	94	Nyctiardea grisea nævia.
61	Sayornis fuscus.	95	Rallus virginianus.
62	Contopus virens.	96	Porzana carolina.
63	Empidonax minimus.	97	Anas obscura.
64	Caprimulgus vociferus.	98	Aix sponsa.
65	Chordeiles popetue.	99	Podilymbus podiceps.
66	Chætura pelagica.		

2. *Species occurring in summer, not known to breed.*

1	Sitta canadensis.	8	Melanerpes erythrocephalus.
2	Certhia familiaris.	9	Pandion haliaëtus carolinensis.
3	Dendroœca pinus.	10	Ardea herodias.
4	Passerculus savanna.	11	Herōdias alba egretta.
5	Quiscalus purpureus.	12	Rhyacophilus solitarius.
6	Empidonax pusillus traillii.	13	Gallinula galeata.
7	Centurus carolinus.		

(C.) WINTER RESIDENTS AND VISITORS.

(Permanent residents are included.)

1	Turdus migratorius.	38	Nyctea scandiaca.
2	Turdus pallasi.	39	Circus hudsonius.
3	Sialia sialis.	40	Accipiter fuscus.
4	Regulus satrapa.	41	Astur atricapillus.
5	Parus atricapillus.	42	Falco peregrinus nævius.
6	Sitta carolinensis.	43	Æsalon columbarius.
7	Sitta canadensis.	44	Tynnunculus sparverius.
8	Certhia familiaris.	45	Buteo borealis.
9	Anorthura troglodytes hyemalis.	46	Buteo lineatus.
10	Dendroeca coronata.	47	Buteo pennsylvanicus.
11	Ampelis garrulus.	48	Archibuteo lagopus sancti-johannis.
12	Ampelis cedrorum.	49	Aquila chrysaëtus canadensis.
13	Lanius borealis.	50	Haliætus leucocephalus.
14	Pinicola enucleator canadensis.	51	Ectopistes migratoria.
15	Carpodacus purpureus.	52	Zenædura carolinensis.
16	Loxia leucoptera.	53	Bonasa umbellus.
17	Loxia curvirostra americana.	54	Ortyx virginiana.
18	Ægiothos linaria.	55	Ardea herodias (Dec. 12, 1880.)
19	Chrysomiris pinus.	56	Anas obscura.
20	Astragalinus tristis.	57	Spatula clypeata.
21	Plectrophanes nivalis.	58	Fulix marila.
22	Melospiza fasciata.	59	Fulix affinis.
23	Junco hyemalis.	60	Æthyia vallisneria.
24	Spizella montana.	61	Clangula glaucium americana.
25	Passer domesticus.	62	Clangula albeola.
26	Sturnella magna.	63	Harelda glacialis.
27	Corvus frugivorus.	64	Melanetta velvetina.
28	Cyanocitta cristata.	65	Mergus merganser americanus.
29	Picus villosus.	66	Mergus serrator.
30	Picus pubescens.	67	Lophodytes cucullatus.
31	Sphyrapicus varius.	68	Larus argentatus.
32	Melanerpes erythrocephalus.	69	Larus delawarensis.
33	Colaptes auratus.	70	Larus philadelphiæ.
34	Bubo virginianus.	71	Podiceps holbölli.
35	Scops asio.	72	Dytes auritus.
36	Asio americanus.	73	Colymbus torquatus.
37	Strix nebulosa.		

(D.) MIGRANTS NOT KNOWN TO BREED.

(Some of these winter.)

- | | | | |
|----|---------------------------------|----|-------------------------------------|
| 1 | Turdus pallasi. | 39 | Astur atricapillus. |
| 2 | Turdus swainsoni. | 40 | Æsalon columbarius. |
| 3 | Turdus swainsoni aliciae. | 41 | Archibuteo lagopus sancti-johannis. |
| 4 | Regulus calendula. | 42 | Aquila chrysaëtus canadensis. |
| 5 | Regulus satrapa. | 43 | Botaurus lentiginosus. |
| 6 | Sitta canadensis. | 44 | Ardetta exilis. |
| 7 | Anorthura troglodytes hyemalis. | 45 | Charadrius dominicus. |
| 8 | Eremophila alpestris. | 46 | Oxyechus vociferus. |
| 9 | Anthus ludovicianus. | 47 | Gallinago media wilsoni. |
| 10 | Helminthophaga celata. | 48 | Ereunetes pusillus. |
| 11 | Helminthophaga peregrina. | 49 | Totanus melanoleucus. |
| 12 | Dendroeca cærulescens. | 50 | Totanus flavipes. |
| 13 | Dendroeca cœrulea. | 51 | Rhyacophilus solitarius. |
| 14 | Dendroeca coronata. | 52 | Rallus longirostris crepitans. |
| 15 | Dendroeca blackburniæ. | 53 | Fulica americana. |
| 16 | Dendroeca striata. | 54 | Olor americanus. |
| 17 | Dendroeca castanea. | 55 | Chen hyperboreus. |
| 18 | Dendroeca maculosa. | 56 | Bernicla canadensis. |
| 19 | Dendroeca tigrina. | 57 | Bernicla brenta. |
| 20 | Dendroeca palmarum. | 58 | Anas boscas. |
| 21 | Siurus nævius. | 59 | Chaulelasmus streperus. |
| 22 | Geothlypis philadelphia. | 60 | Dafla acuta. |
| 23 | Myiodioctes canadensis. | 61 | Mareca americana. |
| 24 | Myiodioctes pusillus. | 62 | Spatula clypeata. |
| 25 | Vireo philadelphicus. | 63 | Querquedula discors. |
| 26 | Vireo solitarius. | 64 | Nettion carolinensis. |
| 27 | Ammodramus caudacutus. | 65 | Fulix marila. |
| 28 | Junco hyemalis. | 66 | Fulix affinis. |
| 29 | Spizella montana. | 67 | Fulix collaris. |
| 30 | Zonotrichia albicollis. | 68 | Æthyia vallisneria. |
| 31 | Zonotrichia leucophrys. | 69 | Æthyia americana. |
| 32 | Passerella iliaca. | 70 | Clangula glaucium americana. |
| 33 | Scolecophagus ferrugineus. | 71 | Clangula albeola. |
| 34 | Contopus borealis. | 72 | Harelda glacialis. |
| 35 | Empidonax pusillus trailli. | 73 | Œdemia americana. |
| 36 | Empidonax flaviventris. | 74 | Melanetta velutina. |
| 37 | Sphyrapicus varius. | 75 | Pelionetta perspicillata. |
| 38 | Asio accipitrinus. | 76 | Erismatura rubida. |

77	Mergus merganser americanus.	84	Sterna fluviatilis.
78	Mergus serrator.	85	Sterna fuliginosa.
79	Lophodytes cucullatus.	86	Hydrochelidon lariformis.
80	Larus argentatus.	87	Podiceps holbölli.
81	Larus delawarensis.	88	Dytes auritus.
82	Larus atricilla.	89	Colymbus torquatus.
83	Larus philadelphiae.	90	Colymbus septentrionalis.

[From 'THE AUK,' Vol. VII, No. 1, January, 1890.]

ADDENDUM TO 'A LIST OF THE BIRDS OF THE HUDSON HIGHLANDS, WITH ANNOTATIONS.*

BY DR. EDGAR A. MEARN.

[204. 1.] *Phalacrocorax dilophus* (Sw. and Rich.). **DOUBLE-CRESTED CORMORANT.**—An adult specimen taken at Cornwall, on the Hudson, October 10, 1883; others seen on the upper Hudson November 4, 1889. Measurements (No. 2627, Cornwall-on-Hudson, October 10, 1883, E. A. M.): length, 33.60; alar expanse, 53.65; wing, 12.90; tail, 7.80; culmen, .20; gape, 3.60; tarsus, 2.40; middle toe and claw, 3.20; middle claw, .47; outer toe and claw, 3.90; outer claw, .38; inner toe and claw, 2.33; inner claw, .47; hallux with its claw, 1.57; claw of hallux, .50 inch. Irides green. Feet and claws jet black. Gular pouch orange.

[52.1.] *Piranga rubra* (Linn.). **SUMMER TANAGER.**—I took a female in perfect plumage, at Highland Falls, New York, May 12, 1883. Measurements (No. 2583, E. A. M.): length, 7.00; alar expanse, 11.40; wing, 3.60; tail, 2.80; culmen, .60; gape, .77; tarsus, .74; middle toe and claw, .75; claw alone, .22 inch. Irides hazel. Bill greenish olive. Legs and feet bluish gray; claws brownish.

[52.2.] *Piranga ludoviciana* (Wils.). **LOUISIANA TANAGER.**—On December 21, 1881, while standing on a high point beside the Hudson, at Fort Montgomery, New York, I noticed a bird flying strongly from the north. It alighted in a tree top near me, and appeared animated and shy; thinking it was about to fly away, I shot it at once, and it proved to be a young male Louisiana Tanager, in good plumage, and fairly well nourished†. Measurements (No. 2244, E. A. M.): length, 7.45; alar expanse, 11.35; wing, 3.62; tail, 3.00; culmen, .65; bill from nostril, .48; gape, .75; tarsus, .82; middle toe and claw, .80; middle toe without claw, .58; middle claw, .25 inch. Iris hazel. Bill with maxilla dusky brown, yellowish on edges, mandible yellow. Tarsi and toes bluish lead color. This bird was in the plumage of the female, but careful dissection proved that it was a young male.

[17.1.] *Cistothorus stellaris* (Licht.). **SHORT-BILLED MARSH WREN.**—A summer resident; not rare at Cornwall, on the Hudson, where its nests and eggs were taken by Mr. Eltinge Roe, in June, 1882, as recorded in the Bulletin of the Nuttall Ornithological Club, Vol. VIII, p. 179.

79. *Ammodramus caudacutus nelsoni* Allen. **NELSON'S SPARROW.**—The Sharp-tailed Sparrows recorded by me from the Hudson Highland have recently been referred by Mr. Jonathan Dwight, Jr., to this form, although he considers them to be intermediate between subspecies *nelsoni* and *subvirgatus*, approaching a little more closely to *nelsoni*.

*Published in Bulletin of Essex Institute, Vols. X to XIII, 1878 to 1881.

†For its only previous capture east of the Mississippi River, see 'Forest and Stream,' Vol. X, p. 95.

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